



SALMON FISHERIES IN
THE YUKON AREA, ALASKA, 1995

A Report to the Alaska Board of Fisheries

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INTRODUCTION

The Yukon Area includes all waters of the Yukon River drainage in Alaska and coastal waters from Canal Point Light, near Cape Stephens, to the Naskonat Peninsula. For management purposes, the area is divided into seven districts and 10 subdistricts (Figure 1). Commercial fishing occurs along the entire 1,200 mile length of the Yukon River in Alaska, and in the lower 225 miles of the Tanana River. The Coastal District of the Yukon Area is only open to subsistence fishing. The Lower Yukon Area (Districts 1, 2, and 3) includes the coastal waters of the delta and that portion of the drainage from the mouth to Old Paradise Village (river mile 301). The Upper Yukon Area (Districts 4, 5, and 6) is the Alaskan portion of the drainage upstream of Old Paradise Village. Commercial, Aboriginal, domestic and sport fisheries also occur in Canada, with fishery management activities conducted by the Canadian Department of Fisheries and Oceans (DFO).

Five species of Pacific salmon occur in the Yukon River, with chum salmon being the most abundant. The chum salmon return is made up of an early (summer chum) run and a later (fall chum) run. Chinook and summer chum salmon generally begin entering the river during late May or early June. The chinook salmon migration has usually passed through the lower river by the second week of July, while the summer chum salmon migration continues until mid-July. Fall chum salmon generally begin entry into the Yukon River by the middle of July and are present into September. Coho salmon generally begin entering the river during the first week of August with entry continuing into September.

Pink salmon are abundant only in even-numbered years (i.e., 1990, 1992, 1994...). Exploitation of pink salmon in both commercial and subsistence fisheries is very low due to their advanced stage of maturity, and the presence of other, more desirable species. Sockeye salmon are rare in the drainage.

DESCRIPTION OF FISHERIES, MANAGEMENT AND REGULATIONS

Management of the Yukon River commercial salmon fishery is complex because of the difficulty in determining run size, harvesting of mixed stocks, high efficiency of the commercial fleet, and allocation issues. The overall goal of the department's research and management program is to manage the various salmon runs for sustained yield under the policies set forth by the Alaska Board of Fisheries. Escapement levels required to produce maximum sustained yields are difficult to determine at this time because of the lack of an adequate database. Currently, most escapement goals in the Yukon River drainage are based on historic escapement trends in key spawning index areas which are surveyed or counted annually. While escapement levels that produce maximum sustained yield may not be known, the escapement goals are intended to sustain the average historical catch in the fisheries.

Because of the mixed stock nature of the fishery, some tributary populations may be under- or over-harvested in relation to their actual abundance. Based on current knowledge, it is impossible to manage individual stocks independently.

Research and management projects are underway, and additional studies are planned, should additional funding become available, to obtain the biological information necessary for more precise management of the salmon runs. Projects conducted in 1995 are listed in Appendix A.1 and include: chinook salmon stock identification studies using scale pattern analysis, chinook and chum salmon stock identification studies using genetic stock identification techniques, main river sonar operation (near Pilot Station) to obtain estimates of total Yukon River

salmon abundance, assessment of spawning escapements in various locations, and test fishing projects in the Yukon River delta and Tanana River to provide inseason run timing and relative abundance information.

Subsistence Fishery

Subsistence salmon fishing in the Yukon River drainage has a long history. Excluding the greater Fairbanks area (population 74,031 in 1990), some 40 communities, with a total population of approximately 11,000 people of primarily Yupik Eskimo and Athabaskan Indian descent, are located within the Yukon Area. Approximately 1,500 households harvest salmon for subsistence use in the drainage.

Subsistence salmon fishing occurs from late May through October, although this varies throughout the drainage. Subsistence salmon fishing is often undertaken by extended family groups representing two or more households in a community. These groups, as well as members of individual households, cooperate to harvest, cut, dry, smoke, and store salmon for subsistence use. Many people who fish for subsistence salmon also operate as commercial fishers.

Subsistence has been designated by the legislature as the highest priority among beneficial uses of fish resources. In major commercial fishing areas it is necessary to place some restrictions on the subsistence fishery in order to enforce commercial fishing regulations. During the fishing season, however, substantially more fishing time is allowed for subsistence than for commercial purposes. Prior to and following the commercial fishing season, subsistence fishing is allowed seven days per week in Districts 1 through 5 (except for Subdistrict 5-A following the commercial season), and for two 42-hour periods per week in Subdistricts 6-A (except for the Kantishna River drainage), 6-B (except for the Old Minto Area) and 6-C. Since the early 1960s subsistence fishing has been generally managed and regulated to coincide with commercial salmon fishing periods when the commercial fishing season is open. Additional subsistence only fishing time may also be allowed. Regulations adopted in 1993 and 1994 separate subsistence and commercial fishing periods in Districts 1, 2, 3 and Subdistrict 4-A. By regulation, subsistence fishing opens 12 hours after the closure of a commercial period and ends 18 hours before the start of the next commercial opening in these areas.

Gillnets, beach seines, and fish wheels are legal gear for subsistence fishing in the Yukon Area. By regulation, the use of driftnets for subsistence fishing has been limited to the Lower Yukon Area and Subdistrict 4-A. In the Lower Yukon Area, set and drift gillnets are the dominant gear types. In the Upper Yukon Area, fish wheels and setnets are primarily used for subsistence fishing.

Subsistence or personal use salmon fishing permits are required in three areas within the upper Yukon River drainage: 1) the Tanana River drainage; 2) the Yukon River between Hess Creek and Dall River; and 3) the Yukon River between the upstream mouth of Twenty-two Mile Slough and the U.S./Canada border. Additionally, in portions of District 6, there are household permit and fishery harvest limits and reporting requirements.

In February 1990, the Alaska Board of Fisheries closed the lower Kantishna River and Toklat River to subsistence fishing for fall chum salmon in order to rebuild the Toklat River spawning stock. However, as a result of a request from fishers for an injunctive relief, the Alaska Superior Court provided for subsistence fishing to resume on those river systems in 1991. In February 1992, the board allowed subsistence fishing in these rivers, but only with fish wheels equipped with liveboxes, and with the stipulation that all chum salmon must be returned alive to the water. In March 1993, the board provided a fishery harvest limit of 2,000 fall chum salmon and individual permit limits of 450 fall chum salmon. Additionally, fishers were allowed to continue fishing after

the fishery harvest limit was reached using a fish wheel with a livebox and releasing all fall chum salmon alive. This same regulatory plan was in place for the 1994 season.

In November 1994, the board amended the Toklat River Fall Chum Salmon Rebuilding Plan by allowing the department the ability to exceed the Kantishna River fall chum salmon subsistence fishery limit in years that indicators suggest that the Toklat River fall chum salmon minimum escapement objective would be achieved. Currently, a postseason foot survey of the Toklat River spawning index area is used to estimate the Toklat River fall chum spawning population. This information is collected in mid-October, too late to use for inseason management of the Kantishna River subsistence fisheries. In 1994 and 1995, the department conducted an experimental sonar project located on the Toklat River. Results from this project may be used to manage the Toklat River fall chum salmon stock inseason.

In the Subdistrict 4-A summer chum salmon commercial fishery, fishers extract and sell roe from their catch and retain the carcasses for subsistence use. From 1980 through 1985, it is likely that many fishers reported a portion of their commercial harvest as subsistence fish. It is probable that the unmarketable carcasses may have simply replaced a large portion of the subsistence harvest in this area. Since 1988, subsistence surveys for the Yukon River drainage were conducted in such a manner as to estimate the number of summer chum salmon taken by commercially-related activities and those taken during subsistence only fishing activities.

Chinook salmon are utilized mainly for human consumption. Although some chum and coho salmon are also used for human consumption, large numbers are taken to feed sled dogs. The practice of keeping sled dogs is much more prevalent in the Upper Yukon Area and it is considered a major factor affecting subsistence use.

Commercial Fishery

Commercial chinook salmon fishing in the Alaskan portion of the Yukon River dates back to 1918, but the present multi-species salmon fishery did not become fully developed until the mid-1970s. During the 1970s, fishing time was liberal with relatively low effort levels. In more recent years, commercial fishing time has been greatly reduced because of the high efficiency of the fleet.

There are two fishing seasons in the Yukon Area: the summer season, which targets chinook and summer chum salmon; and the fall season, which targets fall chum salmon with an incidental harvest of coho salmon. Legal commercial fishing gear consists of set and drift gillnets in the Lower Yukon Area, and fish wheels and set gillnets in the Upper Yukon Area. Open skiffs powered by outboard motors are typically used to operate fishing gear. Separate limited entry permits have been issued for the Upper and Lower Yukon Areas. There are 707 limited entry permits issued for the Lower Yukon Area and 241 limited entry permits issued for the Upper Yukon Area.

Important components of management in the Alaskan portion of the drainage include guideline harvest ranges established by the Alaska Board of Fisheries (Table 1), and emergency orders, which are used to open and close the commercial fishing seasons, establish fishing period frequency and duration, and establish mesh size restrictions. Harvests near the midpoint of the guideline harvest ranges should be expected if the run is of average magnitude. In general, based upon evaluation of run abundance, the department attempts to manage the commercial fisheries such that each district's harvest is proportionately similar within their respective guideline harvest ranges.

Management of the chinook and summer chum salmon runs is difficult because of the overlapping run timing of these species. In the Lower Yukon Area, mesh size restrictions (six inch maximum mesh size) may be implemented to direct the harvest toward summer chum salmon prior to, between, or after chinook salmon directed fishing periods (unrestricted mesh size or 8 inch or greater mesh size).

Currently, there are no guideline harvest ranges established for coho salmon. Commercial coho salmon harvests are dependent on management actions taken for fall chum salmon.

Personal Use Fisheries

Regulations were in effect from 1988 until July 1, 1990 that prohibited non-rural residents from participating in subsistence fishing. In those years, non-rural residents harvested salmon under personal use fishing regulations. The Alaska Supreme Court ruled, effective July 1990, that every resident of the State of Alaska was an eligible subsistence user, making the personal use category obsolete. From July 1, 1990 through 1992, all Alaskan residents qualified as subsistence users.

During a special session in 1992, the legislature passed a subsistence law which allowed the Alaska Boards of Fisheries and Game to divide the state into subsistence or non-subsistence zones. Based on residence, fishers were grouped either as personal use or subsistence fishers. Fishers residing within a non-subsistence zone, were considered personal use fishers regardless of where fishing was done. Likewise, fishers residing in areas outside of non-subsistence zones were considered subsistence users no matter where fishing was done. The Fairbanks Non-Subsistence Use Zone was the only non-subsistence zone created in the Yukon Area by the Boards of Fisheries and Game. This zone basically included the Fairbanks North Star Borough. In October 1993, a Superior Court ruled that this 1992 subsistence law was unconstitutional. The state was immediately granted a stay, which had allowed for status quo fishing regulations to remain in effect until April 11, 1994 when the Alaska Supreme Court vacated the state's motion for a stay. All Alaskan residents were again qualified as subsistence users during the 1994 fishing season.

In 1995, the Joint Board of Fish and Game adopted regulations that affected the Fairbanks Non-subsistence Area. Within non-subsistence areas, no subsistence fishing was allowed. This new regulation primarily affected salmon fishers within Subdistrict 6-C. Subdistrict 6-C falls entirely within the Fairbanks Non-subsistence Area. The 1995 Subdistrict 6-C salmon fishery was managed under personal use regulations. There is a fishery harvest limit in Subdistrict 6-C of 750 chinook salmon, 5,000 summer chum salmon, and 5,200 fall chum and coho salmon combined. If this harvest limit is reached, the personal use fishery in Subdistrict 6-C will be closed.

Sport Fisheries

In general, sport fish salmon harvests in the Yukon Area are relatively minor compared to commercial and subsistence harvests. The Tanana River drainage is the exception, as it supports a popular sport fishery. In 1988, the Board of Fisheries established a guideline harvest range of 300 to 700 chinook salmon for the Salcha River recreational fishery. In 1990, the Board established a guideline harvest range of 300 to 600 chinook salmon for the Chena River recreational fishery.

U.S./Canada Treaty Negotiations and Interim Agreement

Negotiations were initiated in 1985 between the U.S. and Canada regarding a Yukon River salmon treaty. The purpose of these negotiations is to develop coordinated conservation and management between the U.S. and Canada for the chinook and fall chum salmon stocks which spawn in the Yukon River drainage in Canada. Salmon stocks that spawn in Alaska, and Alaska's management of those stocks, is not directly a part of these international negotiations.

In recent years there was realization that, while reaching a comprehensive long term agreement remained a formidable challenge given some of the key unresolved issues, there would be benefits that could be realized by more formally implementing the areas of agreement to date. Work proceeded during 1994 to draw together the agreed elements to date into an interim agreement. A negotiation session was held in Whitehorse, Yukon Territory, Canada in early December 1994 to complete final drafting of this interim Yukon River Agreement, which has taken the form of an exchange of diplomatic notes with two attachments. The first contains the body of the interim agreement and is based upon the areas of agreement to date in these negotiations. The second contains some preamble from the former Protocol draft not needed for an interim agreement, and those elements deferred for further negotiation while the interim agreement is in effect. Formal signing and exchange of the diplomatic notes took place in February 1995.

There will be a Yukon River Panel that will meet periodically to implement the interim Yukon River Agreement. The Panel will also administer a salmon restoration and enhancement fund. The Panel will consist of a U.S. side and a Canadian side. The two sides will need to agree on a decision for an action to be taken. The U.S. side of this Yukon River Panel will consist of four Alaskan Yukon River fishers, one Alaska state government official, and one U.S. federal government official. There will be an advisory group of Alaska Yukon River fishers providing input to the U.S. side. There will also be a Joint Technical Committee providing support to the Panel. The focus of the Panel will be the salmon stocks that spawn in the Canadian portion of the Yukon River drainage. The Panel will make its recommendation to the management agencies in Alaska and Canada.

The interim agreement will be in place through 1997, with an option to extend if both sides so decide. This will allow for a try-out period to get underway with a Yukon River Panel and a Yukon River Salmon Restoration and Enhancement Fund so that we can see whether this process works effectively, without making a longer term and more formal treaty commitment. The panel will likely meet two or more times per year to review information, make recommendations to the management agencies, and administer the Fund.

In the course of these negotiations over the years, both sides have agreed that spawning escapements of chinook and fall chum salmon in the Yukon River drainage in Canada had declined, were substantially below levels necessary to achieve optimum sustained yield, and needed to be rebuilt. It will require both sides working together for rebuilding to be successful.

For Yukon River mainstem chinook salmon, a six-year stabilization plan, was agreed upon beginning with the 1990 season. In Canada, the mainstem Yukon River means the Yukon River drainage in Canada, excluding the Porcupine River drainage. The objective of this plan was to stabilize the stock by preventing further declines in spawning escapements through achieving an escapement of at least 18,000 chinook for each year through 1995 prior to rebuilding. The U.S. contribution to this effort was to endeavor to deliver between 34,800 and 37,800 chinook salmon to the Canadian border on the mainstem Yukon River. The Canadian contribution to this effort was to endeavor to manage the harvest of chinook salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 16,800 to 19,800 chinook salmon. A rebuilding plan for Canadian spawned chinook salmon still needs to be developed.

For Yukon River mainstem fall chum salmon, a 12-year rebuilding plan, ending after the 2001 season, was agreed upon beginning with the 1990 season. The term rebuilding means building spawning escapements back up to prior levels in planned steps over a number of years. The objective of this plan is to rebuild the stock by achieving a spawning escapement of 80,000 or more fall chum for all brood years in the cycle by the year 2001. The U.S. contribution to this effort is to endeavor to deliver to the Canadian border on the mainstem Yukon River the number of fall chum salmon necessary to meet the spawning escapement objective for that year in the rebuilding program, and provide for a Canadian catch within an agreed range. For 1995, the agreement was to endeavor to deliver between 103,600 and 112,600 fall chum salmon to the Canadian border on the mainstem Yukon River. The Canadian contribution to this effort is to endeavor to manage the harvest of fall chum salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 23,600 to 32,600 fall chum salmon.

For the Porcupine River stocks, the two sides have basically agreed only that more needs to be learned, and that new fisheries in the Porcupine River will not be initiated for a number of years.

There are a number of issues that remain to be resolved, and negotiations will resume sometime after the panel process has gotten underway. The goal of the negotiations will be to reach a long-term agreement on the remaining issues, and to also incorporate the relevant elements of the interim agreement.

SUBSISTENCE AND PERSONAL USE SALMON HARVEST, 1995

The 1995 subsistence salmon harvest information is unavailable for inclusion in this report. It is estimated that chinook and summer chum salmon harvests in 1995 will be similar or slightly greater than average due to the above average run sizes experienced in 1995. The 1994 survey and permit subsistence salmon harvest in the Alaskan portion of the Yukon River drainage is summarized in Table 2

Subsistence and personal use salmon harvest information is obtained from a personal interview survey program, subsistence permits, and department records of test fish given to the public. Subsistence salmon permits generally expire on October 15 of any given year. In 1995, 139 fishers applied for Subdistrict 6-C personal use salmon fishing permits. Subsistence surveys of nearly 1,000 households in 34 villages are normally completed by the first week of November. Preliminary 1995 subsistence salmon harvest estimates will be available in February after survey editing, telephone interviews, computer data entry of both survey and permit information, and permit reminder letters have been compiled.

COMMERCIAL SEASON SUMMARY, 1995

The chinook, summer chum and fall chum salmon runs exceeded preseason projections and all were above average in strength. The coho salmon run appeared to be average to below average in abundance. This was the first year that fall chum and coho salmon commercial fishing was allowed drainage-wide since 1991. Salmon escapement goals appeared to have been achieved throughout the drainage. Commercial salmon sales were above the most recent 5-year average (1990-1994), with the exception of coho salmon roe sales. However, declining salmon markets, particularly for chum salmon flesh, had a major impact on the fishery which resulted in limited harvests in some districts and lower exvessel value.

Preliminary commercial sales were 679,174 salmon and 330,824 pounds of unprocessed salmon roe for the Alaskan portion of the Yukon River drainage in 1995. Total sales were composed of 122,728 chinook, 259,774

summer chum, 250,733 fall chum, and 45,939 coho salmon sold in-the-round (Table 3). Additionally, roe sales by species totaled 5,357 pounds for chinook, 290,737 pounds for summer chum, 32,501 pounds for fall chum and 2,229 pounds for coho salmon. The preliminary total estimated commercial salmon harvest including the estimated harvest to produce roe sold was 124,035 chinook, 818,414 summer chum, 283,057 fall chum, and 47,013 coho salmon. The 1995 estimated salmon harvests compared to the 1990 through 1994 five-year averages were as follows: chinook, 17% above (Table 4), summer chum salmon, 93% above (Table 5), fall chum, 241% above (Table 6), and coho, 44% above (Table 7).

The salmon fishery was valued at \$7.2 million to fishers and was 5% below the 1990-1994 average (Table 8). Six buyer-processors and one catcher seller operated in the Lower Yukon Area; and eight buyer-processors and twelve catcher sellers operated in the Upper Yukon Area. A total of 806 permit holders participated in the fishery during 1995; 664 in the Lower Yukon Area and 142 in the Upper Yukon Area (Table 3).

Lower Yukon fishers received an estimated average price per pound of \$2.09 for chinook, \$0.16 for summer chum, \$0.15 for fall chum, and \$0.29 for coho salmon (Table 8). The average price paid for chinook in 1995 was similar to 1994, while the average price paid for summer chum and fall chum salmon was the lowest since 1973. Exvessel value of the Lower Yukon Area fishery was \$5.8 million. The average income for Lower Yukon Area fishers that participated in the 1995 fishery was \$8,776.

Upper Yukon commercial fishers received an estimated average price per pound of \$0.77 for chinook salmon, \$2.64 for chinook salmon roe, \$0.13 for summer chum salmon, \$3.58 for summer chum salmon roe, \$0.13 for fall chum salmon, \$2.96 for fall chum salmon roe, \$0.14 for coho salmon, and \$2.51 for coho salmon roe (Table 8). The average price for salmon roe in 1995 was similar to 1994. The ex-vessel value of the Upper Yukon Area fishery was \$1.3 million. Permit holders who participated in the 1995 fishery earned an average of \$9,342 in the Upper Yukon.

The department sold a total of 2,152 chinook, 6,073 summer chum, 1,121 fall chum, and 193 coho salmon in District 1 test fisheries and 74 chinook and 401 summer chum salmon in District 2 test fisheries in 1995. These fish are not included in commercial sales.

A regulation adopted by the Board of Fisheries in February 1992, requires fishers to report the number of salmon caught but not sold during commercial fishing periods on fish tickets. Fishers reported 23 chinook, 1,139 summer chum and 1 coho salmon were caught but not sold during commercial fishing periods in the Lower Yukon Area in 1995. A total of 179,758 summer chum salmon were reported on fish tickets as caught but not sold in Subdistrict 4-A. In the remainder of the Upper Yukon Area, 1,386 chinook, 3,797 summer chum, 5,023 fall chum and 67 coho salmon were reported caught but not sold.

Chinook and Summer Chum Salmon Season

The 1995 preseason outlook was for an average to above average chinook salmon run based on parent year escapements. The summer chum salmon outlook was for a below average to average run. The commercial harvest in the Alaskan portion of the drainage was anticipated to be between 88,000 and 108,000 chinook and 300,000 to 600,000 summer chum salmon.

The Lower Yukon Area was generally free of ice by May 18. The first chinook salmon catches were reported on May 24 near Sheldon Point by a subsistence fisher. The department's test fishing projects recorded the first

chinook and chum salmon catches on May 29. Chinook and summer chum salmon entered the river primarily through the south and middle mouths.

Chinook salmon migratory timing was slightly early and similar to run timing in 1980 based on the lower river test fishery. Approximately 50% of the chinook salmon run had entered the lower river by June 16. A record test fishing cumulative catch per unit effort (CPUE) of 34.39 for chinook salmon from Big Eddy and Middle Mouth 8.5 inch mesh size set gillnet sites indicated above average abundance of chinook salmon in 1995 and similar to the large runs in 1980, 1981, 1987 and 1994. Initially, the indication of a strong run was viewed cautiously, as water levels were well below normal, which may have resulted in increased efficiency of the test fishery. Chinook salmon test fish catches in 5.5 inch mesh size set gillnets were above average.

A record test net cumulative CPUE of 154.05 for summer chum salmon indicated the 1995 run was above average in abundance and similar to the large runs in 1980 and 1981. Summer chum salmon migratory timing appeared to be average. Approximately 50% of the summer chum salmon return had entered the lower river by June 22 according to test fishing CPUE data.

The Pilot Station sonar project estimated a passage of 263,000 chinook and 3,667,000 summer chum salmon (Table 12). These passage estimates were the largest since the project was initiated in 1986. However, passage estimates for 1995 may not be comparable to those years prior to 1993 because of the change to lower frequency equipment in 1993. In addition, aiming criteria were changed in 1995 to maximize the ability to detect passing fish, so all detected fish were classified as upstream oriented.

Based on the assessment of above average chinook and summer chum salmon abundance, the targeted commercial harvests were increased to above preseason projections. The harvest of chinook salmon was near the upper end of the guideline harvest ranges in Districts 1, 2 and 5, and a record harvest was taken in District 6. However, declining salmon market conditions resulted in no commercial openings in District 3 during the summer season and a limited chinook salmon harvest in District 4. Because of a weak summer chum salmon flesh market, the Lower Yukon Area summer chum harvest was below the lower end of the guideline harvest range. Salmon roe markets remained relatively stable, which resulted in summer chum salmon harvests at or above the upper end of guideline harvest ranges in the Upper Yukon Area.

Districts 1, 2 and 3

The Yukon Area Management Plan requires approximately 7-10 days of chinook salmon passage through the lower river, as documented by increasing subsistence and/or test net catches, prior to initiation of the commercial fishery. This provides for: 1) fish to become distributed throughout the Lower Yukon Area, and 2) passage of a segment of the run out of the lower river before the commercial fishery.

The 1995 Lower Yukon Area commercial salmon fishing season was opened by emergency order after approximately nine days of increasing subsistence and test net catches. Because of early run timing and nine days of increasing subsistence and test fish catches at the mouth of the river, District 2 was opened first with a 9 hour commercial period on June 11. District 1 followed on schedule with a 12 hour period on June 12. Both districts continued fishing on schedule (Monday, Thursday for District 1 and Sunday, Wednesday for District 2) through June 22 with unrestricted mesh size gillnets. In order to spread out the chinook salmon harvest and to ensure adequate escapements throughout the drainage, fishing periods with unrestricted mesh size gillnets were 12 hours or less in duration. In addition, District 2 had a six hour period restricted to six or less mesh size on June 20 in order to allow for the harvest of summer chums while the fresh market was strong. There was no commercial fishing allowed in District 3 because of the lack of markets and no buyers.

The harvest of 21,225 chinook salmon taken during the fourth period in District 1 on June 22 and 23 was the third largest harvest for a 12-hour period on record. Prior to the opening of this period it was anticipated that 10,000 to 11,000 chinook salmon would have been taken. Because of the large chinook harvest, buyer and processor capacity was limited and a six inch or less mesh size period that was scheduled for the evening of June 23 in District 1 had to be canceled. Although this fishing period was canceled with short notice, there was very little confusion within the fleet.

Because of declining market conditions once the chinook harvest reached 100,000 fish and poor summer chum salmon market, no buyers were available in District 2 after June 23 and no further commercial fishing was allowed. District 1 had one more unrestricted fishing period and six periods restricted to six inch or less mesh size after June 23. Because of limited markets, all the chum salmon directed commercial periods were short in duration. In order to eliminate wastage problems and to maximize fishing time, fishers were notified as to the start of periods, but they had to tune in at a specified time on VHF radio for announcement of the length of periods. Fishing time was based on processor capacity and chum salmon abundance as indicated by the lower river test fishery. This strategy appeared to work well. Fishing periods of four or more hours duration appeared to be acceptable to most fishers. Two hour periods were unacceptable, unless salmon abundance was very large because of the lack of time to drift and fishing expenses. The last commercial fishing period in the Lower Yukon Area was on July 7.

The total harvest of 117,564 chinook salmon for Districts 1 and 2 (Table 3) was 2% below the upper end of the guideline harvest range of 120,000 fish and 21% above the 1990-1994 average harvest of 96,786 fish. A total of 114,434 chinook were harvested during unrestricted mesh size fishing periods and 3,098 chinook were harvested during fishing periods restricted to six inch maximum mesh size. The average weight of chinook salmon was 21.8 pounds during unrestricted mesh size periods and 15.1 pounds during six inch maximum mesh size periods.

The total commercial summer chum salmon harvest in Districts 1 and 2 was 226,083 fish, which was 5% above the recent 5-year average harvest of 215,961 fish. Because of declining markets, the harvest was 10% below the lower end of the guideline harvest range of 251,000 summer chums for Districts 1 and 2. A total of 112,223 summer chum were harvested during seven short fishing periods restricted to six inch or less mesh size and 113,860 summer chum were harvested during nine unrestricted mesh size fishing periods in Districts 1 and 2 combined. The average weight of summer chum harvested during six inch maximum mesh size periods and unrestricted mesh size periods was 6.6 pounds and 6.7 pounds respectively.

Preliminary age composition data from the Lower Yukon Area indicated age-6 fish accounted for 77% to 88% of the chinook salmon catch during fishing periods with unrestricted mesh size gillnets. This larger than normal percentage of age-6 chinook salmon may reflect the above average return of age-5 fish in 1994. Twenty-three adipose fin-clipped chinook salmon were collected from June 8 to June 23. A total of 14 fin-clipped chinook were recovered during commercial catch sampling; 9 were recovered from the test fishery. A total of 19 coded wire tags were verified; all originated from the Whitehorse hatchery.

Summer chum salmon commercial harvests in the Lower Yukon Area were dominated by age-5 fish. Age-5 summer chum salmon comprised from 50% to 72% of the catch in fishing periods with unrestricted mesh size gillnets. Age-5 summer chum salmon accounted for 39% to 67% of the catch during restricted mesh size periods.

District 4 and Anvik River Management Area

District 4 was opened to commercial salmon fishing beginning on June 28. The first fishing period in Subdistrict 4-A was 18 hours in duration. For the remainder of the season, fishing periods were 12 hours in duration. This

was the first season during which a fishing schedule of three 12-hour periods per week was established. This schedule worked out very well for fishers and buyers because of the large abundance of summer chum salmon. A large abundance of summer chum salmon was available because of the strong run and low harvest in the lower river due to the weak flesh market. A total of 48,477 pounds of summer chum roe were sold in the Anvik River Management Area and 189,252 pounds of summer chum roe were sold in Subdistrict 4-A (Table 3). The total estimated commercial harvest was 54,744 summer chums in the Anvik River Management Area and 419,688 summer chums in Subdistrict 4-A.

Based on the assessment of a large summer chum salmon run, the sale of roe in Subdistrict 4-A and the Anvik River Management Area was allowed to reach the roe caps. The Board of Fisheries was contacted regarding the possibility of exceeding the roe caps as a harvestable surplus was still available. Because of the controversial nature of the roe fishery and the need for allowing full public hearings, the Board did not approve exceeding the roe caps. Only the sale of summer chum salmon in the round was allowed during the last fishing period in Subdistrict 4-A. Although two buyers anticipated the possibility of buying a limited number of fish in the round, the fishery did not materialize and no sales were made.

This was the second year commercial fishing for summer chum salmon has been allowed in the lower 12 miles of the Anvik River. In the Anvik River, fishing periods were scheduled concurrently with Subdistrict 4-A openings with the exception of the second period. During the first and second periods in the Anvik River, permit holders were limited to selling 600 chum salmon in the round or 400 pounds of roe per period. Permit holders were not limited to the amount of chum salmon or chum roe sold for the remainder of the periods. The management strategy to divert fishing effort from the mainstem Yukon River in Subdistrict 4-A to the Anvik River appeared to work well. The number of permit holders that fished in the Anvik River during concurrent periods with Subdistrict 4-A ranged from 3 to 15 and averaged 10.

A record harvest of 43,345 pounds of summer chum salmon roe was sold in Subdistricts 4-B and 4-C (Table 3). The total estimated harvest of 80,155 summer chums was allowed to exceed the upper end of the guideline harvest range of 47,000 fish based on the large escapement estimates documented in Anvik, Kaltag, Nulato, and Gisasa Rivers. One commercial fishing period was pulled on July 12-14 to ensure adequate numbers of summer chum salmon would return to the Tanana River. Poor fishing conditions and declining markets led to a lower than average total estimated harvest of 481 chinook salmon in Subdistricts 4-B and 4-C.

District 5

In District 5, chinook salmon is the primary species of commercial value during the early season. Summer chum salmon do not contribute substantially to the commercial harvest because of the timing of the fishery, lower availability, poor flesh quality, and the high transportation costs to market.

The commercial fishing season was opened in Subdistricts 5-A, 5-B, and 5-C on July 1 when it was estimated that the chinook salmon run was well distributed throughout the subdistricts. There were three 24-hour periods. The total estimated harvest was 2,753 chinook salmon for Subdistricts 5-A, 5-B, and 5-C. This harvest was near the upper end of the guideline harvest range of 2,600 to 2,800 fish. A total of 107 summer chum salmon and 188 pounds of chum roe were sold (Table 3).

There were four 36-hour fishing periods allowed in Subdistrict 5-D beginning on July 11. A total of 489 chinook salmon were sold in Subdistrict 5-D.

District 6

District 6 had one 42-hour period directed toward the harvest of chinook salmon, which began on July 14. The next commercial fishing period was delayed until July 21 when preliminary escapement information indicated that chinook salmon spawning escapement objectives in the Chena and Salcha River would be achieved and summer chum salmon run abundance indicated there was a surplus available for commercial harvest. Two additional 42-hour commercial fishing periods were allowed. Because of an above average chinook salmon return to the Tanana River, as documented by tower counts on the Chena and Salcha Rivers, the guideline harvest range was exceeded in District 6. Commercial sales totaled 1,660 chinook salmon and 4,731 pounds of chinook salmon roe, for a record estimated harvest of 2,748 fish (Table 3). A total of 24,711 summer chum salmon and 9,475 pounds of summer chum roe were sold, for an estimated total commercial harvest of 37,428 summer chum salmon, which was near the upper end of the guideline harvest range of 13,000 to 38,000 summer chum salmon.

Fall Chum and Coho Salmon Season

Fall chum salmon return as primarily age-4 and age-5 fish. Based on the parent-year escapement information and estimated spawner-return relationships, the 1995 preseason run projection was for approximately 800,000 Yukon River drainage fall chum salmon. As adopted in the Yukon River Drainage Fall Chum Salmon Management Plan (Appendix A.1), the Board of Fisheries identified the need for a minimum of 400,000 fall chum salmon for drainage-wide escapement and 200,000 fall chum salmon for Alaskan subsistence and anticipated Canadian harvests. The 1995 preseason projection suggested that an Alaskan commercial harvest of up to 200,000 fall chum salmon could occur in 1995 and still meet escapement and subsistence needs. However, rebuilding efforts for both the Canadian and Toklat River fall chum salmon stocks lowered the maximum Alaskan commercial harvest level that could be supported by the Yukon River fall chum salmon return. A reduction in the allowable commercial harvest would permit additional salmon to reach the spawning grounds to aid in the rebuilding efforts. If the fall chum salmon return was as projected, fishers could have expected a commercial harvest on the order of 150,000 fall chum salmon. However, based on inseason information, the department was prepared to adjust the run size projection and the corresponding allowable Alaskan commercial-harvestable-surplus upwards or downwards.

The preseason projection was primarily used for management during the early portion of the fall chum salmon run (July 16-31). However, by August 1 inseason assessment indicated that the 1995 fall chum salmon run was larger than projected. The Lower Yukon test fish cumulative CPUE for fall chum salmon through August 1 was 18.19, the second highest on record (1980-1994) and 81% above the average (1980-1994) cumulative CPUE. Additionally, estimated passage of fall chum salmon by the Pilot Station sonar site was approximately 450,000 salmon through August 1. Based on this estimate and historical average run timing data (1986-1991 & 1993-1994), the total season passage of fall chum salmon was projected to be 1.67 million salmon. As the season progressed in time, these and other inseason indicators continued to suggest an above average fall chum salmon run. Based on these inseason run strength indications, the targeted commercial harvest were ultimately increased to the upper end of each district's or subdistrict's guideline harvest range.

Other fall season assessment projects included two Bering Sea Fishermen's Association (BSFA) funded first year test fisheries. These include the Mountain Village drift gillnet test fishery and the Yukon River north bank test fish wheel fishery located near Galena. Other first year assessment projects included two Yukon River test fish wheels located near the village of Fort Yukon. The Fort Yukon test fish wheels were funded by the Council of Athabaskan Tribal Governments. As with most first year projects, there is no historical

database to compare the 1995 results with. The utility of these types of projects improve with each successful year of operation. Additionally, for the second year, BSFA funded the south and north bank test fish wheels located near the village of Tanana.

Despite the targeted harvest of the upper end of the guideline harvest range, marketing difficulties, lack of buyers, limited processing or tendering capacities, limitations on when or where processors could handle fish, lack of a flesh market, low prices, and low effort hampered the Districts 1 through 4 and Subdistricts 5-A, 5-B, and 5-C efforts to reach the upper end of their respective guideline harvest ranges. Most areas had a record or near record number of fall season commercial fishing periods. The 1995 Alaskan estimated commercial harvest was 283,057 fall chum salmon (Table 3). The combined guideline harvest range for the Yukon Area is 72,750 to 320,500 fall chum salmon.

Only one district exceeded the respective guideline harvest range. A record estimated commercial harvest of 74,117 fall chum salmon was sold from four District 6 commercial periods. The District 6 guideline harvest range is 2,750 to 20,500 fall chum salmon. The Board of Fisheries verbally allowed the department to exceed the guideline harvest range in District 6 in years that the department felt that the additional commercial harvest would not jeopardize escapement or subsistence needs. However, with the limited inseason tools available to assess the run into the upper Tanana River, it is difficult to determine the maximum level of the commercial harvest and still meet escapement objectives. Because of this, the department was conservative in the management of the Tanana River commercial fishery. Despite the record Tanana River commercial harvest levels, the department was confident inseason that the escapement objectives in the upper Tanana River would be achieved. One of the difficulties of managing the Tanana River fall season fishery is that escapement results are not known until mid- to late-October following postseason spawning ground surveys, too late for inseason management.

The department recognizes the need for better Tanana River inseason management tools, and this was the first year of a joint BSFA and Department of Fish and Game tagging project in the upper Tanana River. The experimental project's long-term objective includes providing managers with an inseason upper Tanana River fall chum salmon run size estimate. The results from this first year project will be evaluated for its feasibility postseason. Although it may take several years to develop, if the project proves to be successful it will greatly improve the information available to managers of the Tanana River fisheries.

Coho salmon have a later but overlapping run timing with that of fall chum salmon. Comprehensive coho salmon escapement information is lacking on the Yukon River. Coho salmon return primarily as age-4 fish. Based on limited coho salmon escapement surveys in 1991, and assuming average survival rates, the preseason projection was for an above average return of coho salmon in 1995. There are no guideline harvest ranges established for coho salmon. Currently, coho salmon are considered an incidental harvest to the directed commercial fall chum salmon fishery. Approximately 47,000 coho salmon were sold commercially in 1995, of which the majority (approximately 86%) were harvested in Districts 1 and 2 (Table 3).

The exvessel value of the 1995 fall season was approximately \$444,400. A total of 393 fishers participated in the fall season commercial fishery (357 Lower Yukon Area and 36 Upper Yukon Area).

Canadian Fisheries, 1995

Management plans for the Canadian chinook and chum salmon fisheries on the Yukon River in 1995 were formulated to reflect the understandings reached in the interim Yukon River Salmon Agreement. Most of the

commercial harvest on the mainstem Yukon River near Dawson is taken in set gillnets. However, beginning in 1991, more fish wheels have been used to harvest chum salmon. Harvests within the Canadian portion of the Porcupine River drainage is currently limited to an Aboriginal fishery.

Chinook Salmon

The preliminary commercial harvest was 11,344 chinook salmon (Table 9). The estimated Aboriginal fishery harvest was 7,576 chinook in the mainstem Yukon River area and 460 chinook in the Porcupine River drainage. An estimated 300 chinook salmon were taken in the domestic fishery on the Yukon River. In the past, it has been assumed that approximately 300 chinook were harvested annually by the sport fishery in the Canadian portion of the Yukon River drainage. The estimate for 1995 was increased to 700 chinook based on observations of much higher fishing pressure than in previous years. The preliminary mainstem Yukon River border passage estimate for chinook salmon was 52,088 fish, which was the second largest on record.

Fall Chum Salmon

The preliminary Canadian commercial harvest was 39,012 fall chum salmon (Table 10). This was the second highest commercial harvest on record. The preliminary Aboriginal fishery harvest in 1995 was estimated to be 951 fall chum for a estimated total harvest of 39,963 fall chum salmon in the mainstem Yukon River area. The preliminary border passage estimate for fall chum salmon was a record 198,203 fish. A preliminary estimate of 438 fall chum salmon were taken in the Porcupine River drainage Aboriginal fishery.

STATUS OF STOCKS AND FISHERY

Chinook Salmon

Commercial chinook salmon harvests in the Alaskan portion of the Yukon River drainage have shown a decreasing trend. The recent 5-year (1990-1994) average commercial harvest was 106,240 fish compared to the previous 5-year (1985-1989) average of 117,096 chinook salmon (Table 4). The recent 5-year average chinook salmon subsistence harvest in Alaska was 52,254 chinook salmon (Table 11). Total Canadian harvests have averaged 19,115 chinook salmon annually (1990-1994) (Table 9).

Chinook salmon spawning stocks are widely distributed throughout the Yukon River drainage. Chinook salmon harvests are apportioned to region of origin using a combination of scale pattern analysis, age class composition similarity and geographic location of the harvest. Stock identification studies indicate that approximately 51% of the Alaskan chinook salmon harvest is spawned in Canada. Chinook salmon escapements in Canada were well below desired levels from 1985 through 1987. Efforts to increase escapements to the Canadian mainstem Yukon River resulted in larger spawning escapements during the past eight years.

Minimum chinook salmon escapement goals have been established by ADF&G for eight Alaskan streams or index areas (Table 13). These escapement goals are based upon aerial survey index counts which do not represent total escapement. Aerial survey escapement data indicate that spawning escapement objectives for middle river stocks (primarily Tanana River drainage) have not been met during some recent years, however, escapement objectives for lower river stocks (Yukon River drainage below the Koyukuk River) have generally been achieved. It should be understood that caution must be used when comparing aerial survey results between years because of the variability inherent to this methodology.

Chinook salmon escapement goals in the Alaskan portion of the drainage were believed to have been achieved in 1995 (Table 13). Aerial surveys of the East Fork and West Fork of the Andreafsky River documented 1,635 and 1,108 chinook salmon respectively under fair conditions. Escapement goals are 1,500 and 1,400 for the East and West Forks, respectively. A total of 5,841 chinook salmon were passed through a USFWS weir operated on the East Fork Andreafsky River, which also suggested the escapement goal was met. An aerial survey conducted on the Anvik River on July 21 under good conditions documented 1,147 chinook salmon within the index area. The escapement goal is 500 chinook salmon for the Anvik River index area. A Nulato River aerial survey documented 968 chinook salmon in the north fork and 681 chinook salmon in the south fork. The escapement objectives for the north and south forks of the Nulato River are 800 and 500, respectively. An aerial survey of the Gisasa River documented 410 chinook salmon, which is below the minimum goal of 600 fish. However, a total of 4,023 chinook salmon were passed through a USFWS weir operated on the Gisasa River. Tower counts of chinook salmon in the Salcha River and a mark and recapture project in the Chena River conducted by Sport Fish Division in the Tanana River drainage indicated very good escapements. The estimated escapements were 11,616 and 13,537 chinook salmon for Chena and Salcha Rivers, respectively. Aerial surveys of these streams indicated escapement goals were achieved.

Preliminary results of the Department of Fisheries and Oceans mark and recapture project at the U.S./Canada border indicated a spawning escapement of approximately 32,000 chinook in 1995 (Table 14), well above the stabilization level of 18,000 chinook salmon and reaching near the lower end of the JTC recommended escapement goal of 33,000- 43,000 fish.

Summer Chum Salmon

The recent 5-year average (1990-1994) estimated commercial harvest was 423,543 summer chum salmon, which was a 64% decrease from the previous 5-year average of 1,162,965 salmon (Table 5). Approximately 224,760 summer chum salmon are taken annually (1990-1994 average) for subsistence use throughout the drainage (Table 11). Summer chum salmon used for subsistence includes the reported use of carcasses related to commercial roe fisheries.

Summer chum salmon primarily spawn in tributaries from the mouth of the Yukon River to the Tanana River drainage. Escapements in the Anvik River, the largest single producer of summer chum salmon, have been above the escapement goal since 1991 (Table 15). However, spawning escapements to other Yukon River tributaries, based on limited aerial survey information, generally appear to have been below desired levels from 1991 through 1993. Escapement objectives appear to have been met throughout the entire drainage in 1994 and 1995.

The 1995 Anvik River escapement of 1,339,418 fish was more than double the minimum escapement goal of 500,000 fish (Table 15). Overall, the Anvik River sonar estimate accounted for 37% of the total passage estimate for summer chum salmon at Pilot Station. USFWS weir projects were operated on the East Fork Andreafsky and Gisasa Rivers. It is believed that escapement goals were achieved in 1995 with a total of 172,148 and 136,886 summer chum salmon counted at East Fork Andreafsky and Gisasa Rivers, respectively.

Tower counting projects were operated on the Kaltag, Nulato, Chena and Salcha Rivers and Clear Creek. The Kaltag River escapement of 73,940 summer chum salmon was the highest count on record for this tributary. The Tanana Chiefs Conference (TCC) operated a tower project on the Nulato River. The Nulato River escapement estimate was 236,890 fish. In addition, a TCC tower project on Clear Creek in the Hogatza River drainage counted an escapement of 116,735 chum salmon. High water and turbid conditions hampered operations at

Chena River and precluded an accurate estimate of escapement this season. The Salcha River had an escapement estimate of 31,329 summer chum salmon which indicated escapement needs were met.

Fall Chum Salmon

Commercial fall chum salmon harvests in the Alaskan portion of the Yukon River drainage have shown a decreasing trend. The recent 5-year (1990-1994) average estimated commercial harvest of 83,083 fish is a reduction of approximately 50% compared to the previous 5-year (1985-1989) average of 165,558 fall chum salmon (Table 6). The recent 5-year average fall chum salmon subsistence harvest in Alaska was 133,910 fish (Table 11), which was a major decrease compared to the previous 5-year average because of subsistence fishing restrictions in recent years. Approximately 90% of the annual reported subsistence fall chum salmon harvest has occurred in the Upper Yukon Area. Total Canadian fall chum salmon harvests have slightly decreased by approximately 10% from an average of 31,375 fish annually (1985-1989) to 28,391 fish annually (1990-1994) (Table 10).

Major fall chum salmon spawning areas are located in the Chandalar, Tanana, and Porcupine River drainages and within the Canadian portion of the Yukon River drainage. Interim, minimum escapement goals for the Toklat, Delta, Sheenjek, and Fishing Branch Rivers are 33,000, 11,000, 64,000, and 50,000 fall chum salmon, respectively (Table 16). Unlike the chinook and summer chum salmon index objectives, the fall chum salmon interim, minimum escapement objectives are based on estimates of total abundance. In addition, annual estimates of border passage and spawning escapement are available for the fall chum salmon stock in the Canadian portion of the upper mainstem Yukon River. The long term goal of rebuilding the Canadian Yukon River mainstem stock is for a minimum of 80,000 fall chum salmon spawners.

Historical tagging studies conducted near Galena and Ruby indicated that the early segment of fall chum salmon are primarily bound for the Porcupine River drainage and Canadian portion of the Yukon River drainage. The later segment of the fall chum salmon run, although likely mixed with other stocks, is believed to be destined primarily for the Tanana River drainage. Stock identification studies using protein genetics and DNA may improve our understanding of fall chum salmon timing by spawning stock through the fisheries.

During the 1980s, there was concern for the health of fall chum salmon stocks because spawning escapements were below objective levels from 1982 through 1984 (Table 16). Additional regulatory restrictions adopted by the Board of Fisheries in 1983 and 1986 resulted in generally improved spawning escapements during the late 1980s. However, spawning populations in the Toklat River, Fishing Branch River, and the Yukon River mainstem in Canada have shown less improvement than other spawning areas. Fall chum salmon runs in 1992 and 1993 were poor, with spawning escapements below goals in most systems. However, fall chum abundance and subsequent escapements were much greater in 1994 and 1995.

For the second consecutive year, all fall chum salmon spawning escapement objectives were achieved in 1995. Escapements to the Porcupine River drainage were evaluated by observations made in the Sheenjek and Fishing Branch Rivers. The 1995 preliminary sonar estimate of approximately 235,000 fall chum salmon for the Sheenjek River was the largest on record (Table 16). The preliminary weir passage estimate of 51,971 fall chum salmon to the Fishing Branch River was above the minimum escapement objective of 50,000 fish.

The Tanana River fall chum salmon escapement in 1995 was evaluated by postseason foot surveys made in the Toklat River (inseason using a research and development sonar project) and Delta River index areas. Total estimated escapement to the Toklat River in 1995 was approximately 54,513 fall chum salmon. This is

approximately 65% above the minimum escapement goal of 33,000 fish. The Delta River fall chum salmon escapement was estimated to be 20,587 fish. This is approximately 87% above the minimum escapement objective of 11,000 fish.

The preliminary fall chum salmon spawning population estimate made by the Department of Fisheries and Oceans for the Canadian portion of the mainstem Yukon River in 1995 was approximately 158,000 fish. This escapement estimate was almost double the targeted rebuilding spawning escapement level of 80,000 fall chum salmon for 1995.

Coho Salmon

Commercial coho salmon harvests in the Alaskan portion of the Yukon River drainage have shown a decreasing trend. The recent 5-year (1990-1994) average commercial harvest of 32,681 fish was a decrease of approximately 40% compared to the previous 5-year (1985-1989) average of 54,532 coho salmon (Table 7). Similarly, the recent 5-year average coho salmon subsistence harvest in Alaska of 39,729 fish was a 25% decrease over the previous 5-year average of 52,830 coho salmon (Table 11). Reductions in coho salmon harvests have occurred because of generally poor fall chum salmon runs in 1992 and 1993 and subsequent restricted fishing time.

Coho salmon spawning escapement assessment within the Yukon River drainage is very limited due to funding limitations and survey conditions at that time of year. For the entire Yukon River drainage, only one coho salmon escapement objective has been established. The peak boat survey by Sport Fish Division of the Delta Clearwater River, a tributary of the Tanana River, was 20,100 coho salmon (Table 17). The escapement objective for the Delta Clearwater River is a minimum of 9,000 coho salmon.

In the lower Yukon River drainage, a first year Andreafsky River weir project was operated by the USFWS. The Andreafsky River weir operated from August 1 through September 12 and passed 10,901 coho salmon. Additionally, in the middle Yukon River drainage, an attempt was made by the village of Kaltag and the Alaska Cooperative Extension to operate the Kaltag River chinook and summer chum salmon counting tower into the fall season to estimate the passage of coho salmon. Unfortunately, operational difficulties prevented the ability of the project to estimate passage.

OUTLOOK FOR 1996

Chinook Salmon

The majority of chinook salmon returning to the Yukon River are 6-year-old fish; however, 5- and 7-year-old fish make a significant contribution to the run. Spawning ground escapements in 1990, the brood year producing 6-year-old fish returning in 1996, were judged to be above average in magnitude. However, the return of this brood year as 5-year-old fish in 1995 appeared to be no better than average. The 7-year-old return is expected to be strong based upon the large contribution of age-6 fish in the 1995 run. The return of 5-year-old fish in 1996 is expected to be below average to average in abundance based on below average to average spawning escapements observed in 1991. Overall, the 1996 chinook salmon run is anticipated to be average in strength. The commercial harvest in Alaska is expected to total 88,000-108,000 chinook salmon (82,000-100,000 fish in the Lower Yukon Area and 6,000-8,000 fish in the Upper Yukon Area).

Summer Chum Salmon

The return of 5-year-old fish in 1996 is expected to be average to above average based on spawning escapements observed in 1991 and the contribution of 4-year-old fish in 1995 run. A below average to average return of age-4 summer chums is expected. Summer chum salmon spawning escapement to the Anvik River in 1992 was 775,000, 55% above the escapement goal of 500,000. However, escapements to other spawning areas in 1992 appeared to be below average based upon aerial surveys. Overall, the 1996 outlook is for an average summer chum salmon run. The commercial harvest is expected to be 400,000-800,000 fish.

Fall Chum Salmon

For the years 1974 through 1989, fall chum salmon escapements ranged from approximately 110,000 (1982) to 1,200,000 (1975). The escapement in these years resulted in subsequent returns which ranged in size from approximately 301,000 (1988 production) to 1,400,000 (1975 production) fish. Corresponding return per spawner (R/P) rates ranged from 1.11 to 4.51 with smaller escapements tending to result in a higher R/P. The average return per spawner for all years combined was 2.40. Although age-6 fish have not yet returned from the 1990 brood year, it is known, just from the return of age groups 3 through 5, that productivity from that brood year will exceed 2.68. Similarly, production from the 1991 brood year will also be well above average since the return of only age-3 and age-4 fish already indicate a minimum production level of 2.47.

A Ricker model was used to predict the returns from the 1990 to 1993 parent-years which will contribute to the 1996 run. This process resulted in a 1996 projection of 630,608 fish with the following age composition:

Age-3 fish	23,343 (1993 Brood Year)
Age-4 fish	407,223 (1992 Brood Year)
Age-5 fish	194,046 (1991 Brood Year)
Age-6 fish	5,996 (1990 Brood Year)

The number of fall chum salmon allocated to a Yukon River commercial fishery is dependent upon, and would fluctuate in relationship to, the sum of the number of fish needed to meet both escapement requirements and subsistence needs throughout the drainage. The 1995 Yukon River Drainage Fall Chum Salmon Management Plan directed that only when the fall chum salmon run is projected to be more than 650,000 fish may the department consider a directed Yukon River fall chum salmon commercial fishery. Under a management plan similar to that used in 1995, the 1996 preseason projection would not be encouraging for Alaskan fall chum salmon commercial fishing activities. However, as 1996 inseason information becomes available, the department may adjust the run size projection and the corresponding allowable commercially harvestable surplus upwards or downwards.

Coho Salmon

Comprehensive coho salmon escapement information is lacking in the Yukon River drainage. It is known that coho salmon return primarily as age-4 fish. Assuming average survival rates, limited coho salmon escapement surveys in 1992 suggest a below average return of coho salmon in 1996. Coho salmon have a later but overlapping run timing with that of fall chum salmon. There are no guideline harvest ranges established for coho

salmon. Currently, coho salmon are considered incidental harvest to the directed commercial fall chum salmon fishery.

BOARD REGULATORY PROPOSALS, MARCH 1996

Two Agenda Change Requests (ACR) pertaining to Yukon Area Salmon fisheries have been accepted for review at the March 1996 Board of Fisheries meeting. The Yukon River Fall Chum Salmon Management Plan will be reviewed by the board, ACR #3. The Board of Fisheries adopted the current Yukon River Drainage Fall Chum Salmon Management Plan in November of 1994 (Appendix A.1.). This plan identified the need for spawning escapement and rebuilding requirements throughout the drainage, subsistence needs for the Alaskan portion of the drainage, and the commitments for Canadian harvests. The plan is dependent on the departments ability to accurately assess the run size entering the river and taking appropriate management actions.

Additionally, ACR #8 requests the board to eliminate the summer chum salmon roe cap for Subdistrict 4-A. This is an economic/allocation public policy issue and involves concerns about utilization of salmon carcasses in roe fisheries and possible wastage. Because of market conditions, summer chum salmon roe is the primary product sold by fishers in District 4. The largest summer chum salmon harvest in District 4 occurs in Subdistrict 4-A. The current guideline harvest range for Subdistrict 4-A is 113,000-338,000 summer chum salmon, or the equivalent roe poundage of 61,000-183,000 pounds of roe, or some combination of fish and pounds of roe (Table 1). By regulation, no more than 183,000 pounds of summer chum salmon roe may be sold from Subdistrict 4-A (5 AAC 05.362 (2)) and no more than 50,000 pounds of summer chum salmon roe may be sold from the Anvik River Management Area (5 AAC 05.368 (4)) annually. Once the roe caps are reached only the sale of chum salmon in the round is allowed.

In the Subdistrict 4-A and Anvik River summer chum salmon roe fisheries, an effort is made to release males alive and to cut and hang fish which are killed on fish racks to dry for later subsistence use. However, there is a limit to the number of carcasses produced by the commercial fishery that can be utilized by local subsistence users. The roe caps were primarily implemented as a measure to prevent wastage and to encourage sales of fish in the round. The Subdistrict 4-A roe cap was adopted in February 1990. At that time, several Board members expressed the desire that roe fisheries be converted to in the round fisheries. However, with current salmon markets this approach is problematic particularly since the later portion of the run contains the lowest quality and most unmarketable fish. Certainly, if markets for chum salmon carcasses can be developed it would be beneficial to the fishery.

The flesh market for chum salmon has greatly declined in the last two years, while the chum salmon roe market has remained relatively stable. Because of market conditions, the chum salmon harvest in the Lower Yukon Area was much lower than the surplus available for commercial harvest in 1994 and 1995. The above average run size combined with the lower commercial harvest in the Lower Yukon Area in 1995 resulted in a large harvestable surplus of summer chum salmon in Subdistrict 4-A and the Anvik River. Continued poor flesh markets may result in an increase in the surplus of chum salmon available for harvest in other locations of the Yukon River. When harvests are allowed to exceed the guideline harvest ranges during years of very large summer chum salmon runs, a roe cap will prohibit further harvest if buyers cannot buy chum salmon in the round. In other districts without roe caps, commercial fishing would be able to continue.

In addition, there is one Yukon Area salmon regulatory proposal which will be reviewed by the board in March 1996. Proposal 451 requests either elimination of the Coastal District or changing the location of the northern boundary.

FIGURE, TABLES

AND APPENDICES

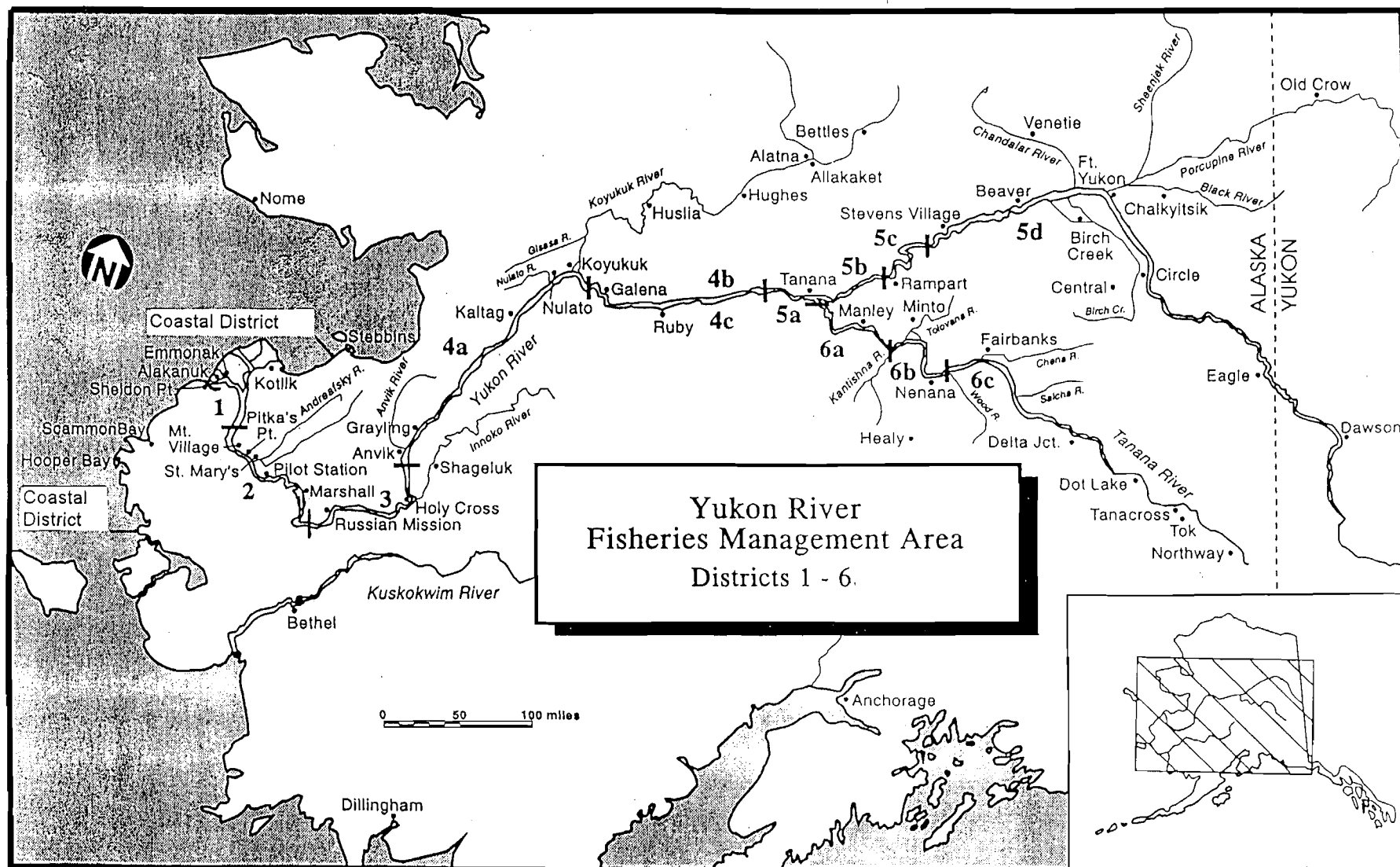


Figure 1. Map of Alaskan portion of the Yukon River drainage, showing communities and fishing districts.

Table 1. Guideline harvest ranges and mid-points for commercial harvest of Yukon River chinook, summer chum and fall chum salmon in Alaska.

Chinook Salmon						
District or Subdistrict	Guideline Harvest Range a					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	60,000	89.1	90,000	91.6	120,000	92.9
3	1,800	2.7	2,000	2.0	2,200	1.7
4	2,250	3.3	2,550	2.6	2,850	2.2
5A,B,C	2,400	3.6	2,600	2.6	2,800	2.2
5D	300	0.4	400	0.4	500	0.4
6	600	0.9	700	0.7	800	0.6
Total	67,350	100.0	98,250	100.0	129,150	100.0
Summer Chum Salmon						
District or Subdistrict	Guideline Harvest Range b					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	251,000	62.8	503,000	62.9	755,000	62.9
3	6,000	1.5	12,500	1.6	19,000	1.6
4A c	113,000	28.3	225,500	28.2	338,000	28.2
4B,C	16,000	4.0	31,500	3.9	47,000	3.9
5	1,000	0.3	2,000	0.3	3,000	0.3
6	13,000	3.3	25,500	3.2	38,000	3.2
Total	400,000	100.0	800,000	100.0	1,200,000	100.0
Fall Chum Salmon						
District or Subdistrict	Guideline Harvest Range d					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1, 2, and 3	60,000	82.5	140,000	71.2	220,000	68.6
4B,C	5,000	6.9	22,500	11.4	40,000	12.5
5A,B,C	4,000	5.5	20,000	10.2	36,000	11.2
5D	1,000	1.4	2,500	1.3	4,000	1.2
6	2,750	3.8	11,625	5.9	20,500	6.4
Total	72,750	100.0	196,625	100.0	320,500	100.0

a The chinook salmon guideline harvest ranges have been in effect since 1981.

b Summer chum salmon guideline harvest ranges were established in February 1990 based on the average harvest shares from 1975-1989.

c Or the equivalent roe poundage of 61,000 to 183,000 pounds or some combination of fish and pounds of roe.

d Fall chum salmon guideline harvest ranges were most recently changed in 1990.

Table 2. Subsistence salmon harvest estimates and related information for the Alaskan portion of the Yukon River drainage, 1994. a

Village	Survey Date	b	Fishing Households	Dogs	Chinook	Summer Chum	Fall Chum	Coho	Set Nets	Drift Nets	Fish Wheels	
Hooper Bay	9/6-9/7	c	69	244	157	10,556	284	1	69	0	0	
Scammon Bay	9/6		45	123	668	4,347	63	80	45	0	0	
Yukon Area Coastal Communities			114	367	825	14,903	347	81	114	0	0	
Sheldon Pt.	9/2	d	18	45	606	1,941	25	52	17	1	0	
Alakanuk	9/1-9/3		66	200	1,045	5,947	73	94	36	30	0	
Emmonak	8/31-9/1, 9/3		64	278	2,384	13,060	3,441	959	23	41	0	
Kotlik	8/31-9/1		71	296	2,505	11,197	1,348	2,167	39	32	0	
Retained from Commercial		f			114	12,608	0	0				
District 1 Subtotal			219	819	6,654	44,753	4,887	3,272	115	104	0	
Mt. Village	9/16-9/17	g	65	206	1,511	3,938	797	968	7	58	0	
Pitkas Pt.	9/15		16	62	469	1,103	294	364	1	15	0	
St. Marys	9/15, 9/17		72	260	2,722	10,128	1,062	614	9	63	0	
Pilot Station	9/9-9/10		36	156	1,977	5,450	1,527	811	4	32	0	
Marshall	9/12		45	390	2,277	2,288	471	1,124	20	25	0	
Retained from Commercial				78	5,745	0	0					
District 2 Subtotal			234	1,074	9,034	28,652	4,151	3,881	41	193	0	
Russian Mission	9/13		29	171	1,793	801	11	55	24	5	0	
Holy Cross	9/9-9/10		49	138	4,040	1,479	665	171	15	34	0	
Retained from Commercial					25	59	0	0				
District 3 Subtotal			78	309	5,858	2,339	676	226	39	39	0	
Lower Yukon River Drainage Total			531	2,202	21,546	75,744	9,714	7,379	195	336	0	
Anvik	9/12	h	15	76	424	907	155	95	11	0	4	
Grayling	9/13-9/14		30	258	1,843	1,418	811	36	21	8	1	
Kaltag	10/5-10/6		35	126	1,653	3,683	630	245	2	30	3	
Nulato	10/4-10/5		56	250	1,735	975	1,109	27	14	42	0	
Koyukuk	10/6		16	76	589	2,039	1,049	305	7	7	2	
Galena	10/4-10/5		54	296	1,834	1,198	3,963	803	31	15	8	
Ruby	10/6-10/7		23	281	1,539	4,586	5,553	1,957	10	0	13	
Retained from Commercial					203	--	0	0				
District 4 Yukon R. Subtotal			i	229	1,363	9,820	14,806	13,270	3,468	96	102	31
Shageluk	10/6-10/7	j	12	104	291	6,212	186	137	10	1	1	
innoko R. Subtotal												
Huslia	10/6-10/7	k	14	189	239	6,014	55	47	12	0	2	
Hughes	Did not survey.		9	48	107	1,581	0	0	9	0	0	
Allakaket	Did not survey.		19	127	338	4,693	0	0	19	0	0	
Alatna	Did not survey.		5	13	26	365	0	0	5	0	0	
Bettles	10/30		3	97	0	45	0	0	3	0	0	
Koyukuk R. Subtotal				50	474	710	12,698	55	47	48	0	2
District 4 Subtotal				291	1,941	10,821	33,716	13,511	3,652	154	103	34
Tanana	10/21-10/23	l	45	474	2,999	7,022	34,681	2,587	19	0	26	
Rampart	10/25-10/26		14	75	1,354	559	1,007	99	14	0	0	
Fairbanks NSB	permits	m	29	230	1,920	360	2,870	25	26	0	3	
Stevens Village	10/19		20	87	2,814	459	45	0	18	0	2	
Birch Creek	10/25	n	3	11	119	0	0	0	3	0	0	
Beaver	10/18		12	61	850	655	2,069	10	9	0	3	
Ft. Yukon	10/27-10/29	o	77	384	4,727	2,043	6,827	963	35	0	42	
Circle	permits		11	80	1,377	98	4,581	30	6	0	5	
Central	permits		p	8	28	240	8	0	0	8	0	0
Eagle	permits		q	27	156	1,234	38	8,263	0	21	0	6
Other	permits		r	7	69	602	21	0	0	7	0	0
Retained from Commercial					868	676	0	0				
District 5 Yukon R. Subtotal				253	1,655	19,104	11,939	60,343	3,714	166	0	87

-Continued-

Table 2. (p. 2 of 2). a

Village	Survey Date	b	Fishing Households	Dogs	Chinook	Summer Chum	Fall Chum	Coho	Set Nets	Drift Nets	Fish Wheels
Venetie	10/25-10/26		28	244	524	567	4,302	4	22	0	6
Chalkyitsik	10/26-10/27		7	90	0	0	1,751	456	7	0	0
<i>Chandalar/Black Rivers Subtotal</i>			35	334	524	567	6,053	460	29	0	6
<i>District 5 Subtotal</i>			288	1,989	19,628	12,506	66,396	4,174	195	0	93
Manley	permits	s	23	476	480	1,405	13,722	10,410	17	0	6
Minto	permits	t	33	539	316	509	1,419	2,616	29	0	4
Nenana	permits	u	26	419	759	1,352	11,201	9,387	11	0	15
Healy	permits	v	3	91	0	0	2,002	1,958	2	0	1
Fairbanks NSB	permits	w	118	702	775	3,693	5,006	2,103	102	0	16
Delta Junction	permits	x	4	21	10	25	202	15	4	0	0
Other	permits	y	7	21	30	42	45	0	7	0	0
Retained from Commercial					198	3,518	0	2,900			
<i>District 6 Tanana R. Subtotal</i>			214	2,269	2,568	10,544	33,597	29,389	172	0	42
Upper Yukon River Drainage Total			793	6,199	33,017	56,766	113,504	37,215	521	103	169
Survey Subtotals				1,142	5,936	43,840	107,198	68,444	12,146	590	439
Permit Subtotals			z	296	2,832	7,743	7,551	49,304	26,544	240	0
ADF&G Test Fish Subtotals					2,319	10,053	5,817	3,085			56
Retained from Commercial Subtotals					1,486	22,606	0	2,900			
Alaska, Yukon River Drainage Total			1,324	8,401	54,563	132,510	123,218	44,594	716	439	169
Yukon Area Total (including coastal communities)			1,438	8,768	55,388	147,413	123,565	44,675	830	439	169

- a Data collected by Commercial Fisheries Management and Development Division. Survey data is expanded for number of fishing households, number of dogs, and catch data. Permit data is unexpanded, the number of dogs is based on permits issued, while the number of fishing households and their catch is based on returned permits. Gear data represents the principal gear types used by fishing households, with the exception of gear types not listed.
- b Estimated number of households that fished in surveyed communities or number of permittees who reported fishing in permit required areas.
- c A tagging study conducted at Hooper Bay in 1986 by the Bering Sea Fishermen's Association concluded that harvests in the Nuok Spit area of Hooper Bay intercepted Yukon River and Norton Sound chum salmon stocks.
- d Includes 1,001 chinook, 2,992 summer chum, 1,522 fall chum, and 823 coho salmon from ADF&G test fish catches.
- e Includes 984 chinook, 4,068 summer chum, 1,044 fall chum, and 1,210 coho salmon from ADF&G test fish catches.
- f Salmon retained from commercial catches and used for subsistence purposes as recorded on fish tickets, as reported during subsistence surveys, or as estimated in Dan Bergstrom memorandum dated 10/6/94, whichever District total was higher.
- g Includes 334 chinook, 2,998 summer chum, 1,349 fall chum, and 786 coho salmon from ADF&G test fish catches.
- h Summer chum salmon available for subsistence use as a product of the commercial roe fishery were recorded as commercial related harvest.
- i Does not include 103,002 summer chum salmon taken during commercial roe fishery used for subsistence as documented by surveys.
- j Shageluk harvest data from households fishing mainstem Yukon River and Innoko River.
- k Villages of Hughes, Allakaket & Alakna were not surveyed due to floods in September 1994. 5 year averages, 1989 to 1993, are shown.
- l Includes 1895 fall chum and 266 coho from ADF&G test fish catches.
- m Data from Fairbanks North Star Borough fishermen who fished the Yukon River in a permit required area.
Of the 42 permits issued, 42 returned their permits and 29 fished.
- n Permit harvest information from Stevens Village residents was included in the survey data.
- o Circle. Of the 22 permits issued, 21 returned their permits and 11 fished.
- p Central. Of the 11 permits issued, 11 returned their permits and 8 fished.
- q Eagle. Of the 37 permits issued, 35 returned their permits and 27 fished.
- r Other includes residents of Manley, Minto, Nenana, Tok and Wasilla who fished the Yukon River in a permit area.
Of the 9 permits issued, 9 returned their permits and 7 fished.
- s Manley. Of the 25 permits issued, 25 returned their permits and 23 fished.
- t Minto. Of the 44 permits issued, 42 returned their permits and 33 fished. Includes 12 households that fished in two different permit areas.
- u Nenana. Of the 46 permits issued, 39 returned their permits and 26 fished. Includes 7 fall chum from ADF&G test fish wheel.
- v Healy. Of the 5 permits issued, 5 returned their permits and 3 fished.
- w Data from Fairbanks North Star Borough fishermen who fished the Tanana River. Of the 158 permits issued, 156 returned their permits and 113 fished. Includes 2 households that fished in two different permit areas.
- x Delta. Of the 5 permits issued, 5 returned their permits and 4 fished. Does not include 175 fall chum collected under three Delta River carcass permits.
- y Other includes residents of Anchorage, Bettles, Birch Creek, Dot Lake, Eagle River, Juneau, Northway, and Tok who fished the Tanana River.
Of the 9 permits issued, 9 returned their permits and 7 fished. Does not include 75 fall chum carcasses collected under one Delta River carcass permit issued to a Northway household.
- z Does not include Delta River carcass permits or Stevens Village.

Table 3. Preliminary estimates of commercial salmon sales and estimated harvests in the Alaskan portion of the Yukon River drainage, 1995. ^{a,b}

District Subdist.	No. of Fishermen ^c	Chinook			Summer Chum			Fall Chum			Coho		
		Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated
1	446	76,106	-	76,106	142,266	-	142,266	79,345	-	79,345	21,625	-	21,625
2	255	41,458	-	41,458	83,817	-	83,817	90,831	-	90,831	18,488	-	18,488
Subtotal	664	117,564	-	117,564	226,083	-	226,083	170,176	-	170,176	40,113	-	40,113
3	0	0	-	0	0	-	0	0	-	0	0	-	0
Total Lower Yukon	664	117,564	-	117,564	226,083	-	226,083	170,176	-	170,176	40,113	-	40,113
Anvik River	22	0	0	0	0	48,477	54,744						
4-A	65	0	0	0	0	189,252	419,688 ^d	0	0	0	0	0	0
4-B,C	22	262	626	481	8,873	43,345	80,155 ^d	2,924	4,126	8,731	0	0	0
Subtotal	87	262	626	481	8,873	281,074	554,587	2,924	4,126	8,731	0	0	0
5-A,B,C	28	2,753	0	2,753	107	188	316	5,799	15,992	26,054	0	0	0
5-D	3	489	0	489	0	0	0	3,979	2,823	3,979	0	0	0
Subtotal	31	3,242	0	3,242	107	188	316	9,778	18,815	30,033	0	0	0
6	24	1,660	4,731	2,748	24,711	9,475	37,428	67,855	9,560	74,117	5,826	2,229	6,900
Total Upper Yukon	142	5,164	5,357	6,471	33,691	290,737	592,331	80,557	32,501	112,881	5,826	2,229	6,900
Total Yukon Area	806	122,728	5,357	124,035	259,774	290,737	818,414	250,733	32,501	283,057	45,939	2,229	47,013

^a Commercial sales reported in numbers of fish sold in the round and pounds of unprocessed roe sold by fishermen. Unless otherwise noted, estimated harvest is the number of fish sold in the round plus the estimated number of females harvested to produce the roe sold.

^b Does not include Department test fish sales.

^c Number of unique permits fished by district, subdistrict, or area. Area totals may not add up due to transfers between districts or subdistricts.

^d Estimated number of male and female salmon harvested to produce roe sold.

Table 4. Commercial chinook salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1961-1995.

Upper Yukon Area																	
Lower Yukon Area					District 4			District 5			District 6			Subtotal			Total Estimated Harvest
Year	District 1	District 2	District 3	Subtotal	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	
1961	84,466	29,026	4,368	117,860	-	-	-	-	-	-	-	-	-	1,804	-	1804	119,664
1962	67,099	22,224	4,687	94,010	-	-	-	-	-	-	-	-	-	724	-	724	94,734
1963	85,004	24,221	7,020	116,245	-	-	-	-	-	-	-	-	-	803	-	803	117,048
1964	67,555	20,246	4,705	92,506	-	-	-	-	-	-	-	-	-	1,081	-	1,081	93,587
1965	89,268	23,763	3,204	116,235	-	-	-	-	-	-	-	-	-	1,863	-	1,863	118,098
1966	70,788	16,927	3,612	91,327	-	-	-	-	-	-	-	-	-	1,988	-	1,988	93,315
1967	104,350	20,239	3,618	128,207	-	-	-	-	-	-	-	-	-	1,449	-	1,449	129,656
1968	79,465	21,392	4,543	105,400	-	-	-	-	-	-	-	-	-	1,126	-	1,126	106,526
1969	71,688	14,756	3,595	90,039	-	-	-	-	-	-	-	-	-	988	-	988	91,027
1970	56,648	17,141	3,705	77,494	-	-	-	-	-	-	-	-	-	1,651	-	1,651	79,145
1971	86,042	19,226	3,490	108,758	-	-	-	-	-	-	-	-	-	1,749	-	1,749	110,507
1972	70,052	17,855	3,841	91,748	-	-	-	-	-	-	-	-	-	1,092	-	1,092	92,840
1973	56,981	13,859	3,204	74,044	-	-	-	-	-	-	-	-	-	1,309	-	1,309	75,353
1974	71,840	17,948	3,480	93,268	685	-	685	2,663	-	2,663	1,473	-	1,473	4,821	-	4,821	98,089
1975	44,585	11,315	4,177	60,077	389	-	389	2,872	-	2,872	500	-	500	3,761	-	3,761	63,838
1976	62,410	16,556	4,148	83,114	409	-	409	3,151	-	3,151	1,102	-	1,102	4,662	-	4,662	87,776
1977	69,915	16,722	3,965	90,602	985	-	985	4,162	-	4,162	1,008	-	1,008	6,155	-	6,155	96,757
1978	59,006	32,924	2,916	94,846	608	-	608	3,079	-	3,079	635	-	635	4,322	-	4,322	99,168
1979	75,007	41,498	5,018	121,523	1,989	-	1,989	3,389	-	3,389	772	-	772	6,150	-	6,150	127,673
1980	90,382	50,004	5,240	145,626	1,521	-	1,521	4,891	-	4,891	1,947	-	1,947	8,359	-	8,359	153,985
1981	99,506	45,781	4,023	149,310	1,347	-	1,347	6,374	-	6,374	987	-	987	8,708	-	8,708	158,018
1982	74,450	39,132	2,609	116,191	1,087	-	1,087	5,385	-	5,385	981	-	981	7,453	-	7,453	123,644
1983	95,457	43,229	4,106	142,792	601	-	601	3,606	-	3,606	911	-	911	5,118	-	5,118	147,910
1984	74,671	36,697	3,039	114,407	961	-	961	3,669	-	3,669	867	-	867	5,497	-	5,497	119,904
1985	90,011	48,365	2,588	140,964	664	-	664	3,418	-	3,418	1,142	-	1,142	5,224	-	5,224	146,188
1986	53,035	41,849	901	95,785	502	-	502	2,733	-	2,733	950	-	950	4,185	-	4,185	99,970
1987	76,643	47,458	2,039	126,140	1,524	-	1,524	3,758	-	3,758	3,338	-	3,338	8,620	-	8,620	134,760
1988	56,120	35,120	1,767	93,007	3,159	-	3,159	3,436	-	3,436	762	-	762	7,357	-	7,357	100,364
1989	61,570	33,166	1,645	96,381	2,790	-	2,790	3,286	-	3,286	1,741	-	1,741	7,817	-	7,817	104,198
1990	51,199	33,061	2,341	86,601	3,536	8	3,538	3,353	47	3,365	1,757	1,676	2,156	8,646	1,731	9,059	95,660
1991	56,332	39,260	2,344	97,936	2,446	2,222	3,582	3,810	62	3,826	686	1,545	1,072	6,942	3,829	8,480	106,416
1992	74,212	38,139	1,819	114,170	1,651	2,273	2,394	3,852	7	3,855	572	884	753	6,075	3,164	7,002	121,172
1993	49,286	37,293	1,501	88,080	1,349	701	1,577	3,008	0	3,008	1,113	1,313	1,445	5,470	2,014	6,030	94,110
1994	62,241	41,692	1,114	105,047	2,216	564	2,443	3,739	10	3,744	2,135	1,820	2,606	8,090	2,394	8,793	113,840
1995	76,106	41,458	0	117,564	262	626	481	3,242	0	3,242	1,660	4,731	2,748	5,164	5,357	6,471	124,035
5 Yr Ave 1985-89	67,476	41,192	1,788	110,455	1,728	-	1,728	3,326	-	3,326	1,587	-	1,587	6,641	-	6,641	117,096
5 Yr Ave 1990-94	58,654	37,889	1,824	98,367	2,240	1,154	2,707	3,552	25	3,560	1,253	1,448	1,606	7,045	2,626	7,873	106,240

• Harvest reported in numbers of fish sold in the round and pounds of roe sold. Since 1990, efforts were made to separate chinook roe from summer chum roe. Does not include department test fish sales.

• All fish sold in the round. Includes department test fish sales prior to 1988.

• The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

• In 1974, District 4 was subdivided to include Districts 5 and 6.

• Includes the illegal sales of 653 chinook salmon in District 5, and 2,136 chinook salmon in District 6.

• Includes the illegal sales of 3,211 chinook salmon.

• Includes the illegal sales of 1,101 chinook salmon.

• Includes the illegal sales of 2,711 chinook salmon in District 1, and 284 chinook salmon in District 2.

• Includes the illegal sales of 1,218 chinook salmon in District 1, and 207 chinook salmon in District 2.

Table 5. Commercial summer chum salmon sales and estimated harvest by area and district, Yukon River drainage, 1967-1995.

Upper Yukon Area																	
Lower Yukon Area ^a					District 4			District 5			District 6			Subtotal		Total Harvest	
Year	District 1	District 2	District 3	Subtotal	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c	
1967	9,453	1,425	57	10,935	-	-	-	-	-	-	-	-	-	0	0	0	10,935
1968	12,995	1,407	68	14,470	-	-	-	-	-	-	-	-	-	0	0	0	14,470
1969	56,886	5,080	-	61,966	-	-	-	-	-	-	-	-	-	0	0	0	61,966
1970	117,357	19,649	-	137,006	-	-	-	-	-	-	-	-	-	0	0	0	137,006
1971	93,928	6,112	50	100,090	-	-	-	-	-	-	-	-	-	0	0	0	100,090
1972	114,234	20,907	527	135,668	-	-	-	-	-	-	-	-	-	0	0	0	135,668
1973	221,644	63,402	463	285,509	-	-	-	-	-	-	-	-	-	0	0	0	285,509
1974	466,004	74,152	1,721	541,877	27,866	-	27,866	8,831	-	6,831	13,318	-	13,318	48,015	0	48,015	589,892
1975	418,323	99,139	-	517,462	165,054	-	165,054	12,997	-	12,997	14,782	-	14,782	192,833	0	192,833	710,295
1976	273,204	99,190	9,802	382,196	211,307	-	211,307	774	-	774	6,617	-	6,617	218,698	0	218,698	600,894
1977	250,652	105,679	3,412	359,743	169,541	-	169,541	1,274	-	1,274	4,317	-	4,317	175,132	0	175,132	534,875
1978	393,785	227,548	27,003	648,336	364,184	16,920	381,104	4,892	605	5,497	34,814	8,236	43,050	403,890	25,761	429,651	1,077,987
1979	369,934	172,838	40,015	582,787	169,430	35,317	204,747	8,608	1,009	9,617	18,491	3,891	22,382	196,529	40,217	236,746	819,533
1980	391,252	308,704	44,782	744,738	147,560	135,824	283,384	456	-	456	35,855	3,282	39,137	183,871	139,106	322,977	1,087,715
1981	507,158	351,878	54,471	913,507	59,718	187,032	330,445	1,236	49	1,285	32,477	1,987	34,464	93,431	189,068	366,194	1,279,701
1982	249,516	182,344	4,086	435,946	3,647	151,281	257,719	213	21	234	21,597	1,517	23,114	25,457	152,819	281,067	717,013
1983	451,164	248,092	14,600	713,856	6,672	148,125	255,388	42	1,856	1,898	24,309	18	24,327	31,023	149,999	281,813	995,469
1984	292,676	236,931	1,087	530,694	1,009	166,842	278,070	645	47	692	56,249	335	56,584	57,903	167,224	335,346	866,040
1985	247,486	188,099	1,792	437,377	12,007	247,085	427,483	700	-	700	66,913	1,540	68,453	79,820	248,625	496,636	934,013
1986	381,127	288,427	442	669,996	300	269,545	465,535	690	-	690	50,483	2,146	52,629	51,473	271,691	518,854	1,188,850
1987	222,898	174,876	3,501	401,275	29,991	121,474	209,800	362	44	406	10,610	450	11,060	40,963	121,968	221,266	622,541
1988	645,322	424,461	13,965	1,083,748	24,051	254,526	490,074	722	363	1,085	40,129	1,646	41,775	64,902	256,535	532,934	1,618,882
1989	544,373	343,032	7,578	894,983	18,554	283,305	510,244	154	373	527	42,115	4,871	46,986	60,823	288,549	557,757	1,452,740
1990	146,725	131,755	643	279,123	12,364	105,723	222,550	11	594	671	11,127	3,059	14,833	23,502	109,376	238,054	517,177
1991	140,470	175,149	8,912	324,531	6,381	137,232	309,644	4	28	35	18,197	4,716	23,892	24,582	141,976	333,571	858,102
1992	177,329	147,129	65	324,523	2,659	110,809	211,396	102	295	430	5,029	1,892	7,228	7,790	112,996	219,054	543,577
1993	73,659	19,332	463	93,454	27	22,447	42,957	0	0	0	3,041	515	3,705	3,068	22,962	46,682	140,116
1994	42,332	12,869	35	55,236	3,611	89,717	171,607	229	212	464	21,208	7,828	31,434	25,048	97,757	203,505	258,741
1995	142,266	83,817	0	226,083	8,873	281,074	554,587	107	188	316	24,711	9,475	37,428	33,691	290,737	592,331	818,414
5 Yr Ave 1985-89	408,241	283,779	5,456	697,476	16,981	235,187	420,627	526	156	682	42,050	2,131	44,181	59,556	237,474	465,489	1,162,965
5 Yr Ave 1990-94	116,103	97,247	2,024	215,373	5,008	93,186	191,631	69	226	320	11,720	3,602	16,218	16,798	97,013	208,169	423,543

^a Harvest reported in numbers of fish sold in the round and pounds of roe. Roe sales may include some pink and chinook salmon roe. Does not include department test fish sales.^b All sales are fish in the round. Includes department test fish sales prior to 1988.^c The estimated harvest is the fish sold in the round plus the estimated number of females caught to produce the roe sold. In addition, the estimated harvest for District 4 includes the estimated number of unsold males harvested.^d In 1974, District 4 was subdivided to include Districts 5 and 6.^e Includes the illegal sales of 150 summer chum salmon in District 1.^f Does not include 1,233 female summer chum salmon sold in Subdistrict 6-C with roe extracted and roe sold separately. These fish are included in estimated harvest to produce roe sold.^g Includes the illegal sales of 1,023 summer chum salmon.^h Includes the illegal sales of 31 summer chum salmon in District 1, and 91 summer chum salmon in District 2.

Table 6. Commercial fall chum salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1961-1995.

Upper Yukon Area																	
Lower Yukon Area					District 4			District 5			District 6			Subtotal			Total Estimated Harvest
Year	District 1	District 2	District 3	Subtotal	Numbers	Roe	Estimated Harvest	Numbers	Roe	Estimated Harvest	Numbers	Roe	Estimated Harvest	Numbers	Roe	Estimated Harvest	
1961	42,461	-	-	42,461	-	-	-	-	-	-	-	-	-	0	0	0	42,461
1962	53,116	-	-	53,116	-	-	-	-	-	-	-	-	-	0	0	0	53,116
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
1964	8,347	-	-	8,347	-	-	-	-	-	-	-	-	-	0	0	0	8,347
1965	22,936	-	-	22,936	-	-	-	-	-	-	-	-	-	381	0	381	23,317
1966	69,836	-	1,209	71,045	-	-	-	-	-	-	-	-	-	0	0	0	71,045
1967	36,451	-	1,823	38,274	-	-	-	-	-	-	-	-	-	0	0	0	38,274
1968	49,857	-	3,068	52,925	-	-	-	-	-	-	-	-	-	0	0	0	52,925
1969	128,866	-	1,722	130,588	-	-	-	-	-	-	-	-	-	722	0	722	131,310
1970	200,306	4,858	3,285	208,449	-	-	-	-	-	-	-	-	-	1,146	0	1,146	209,595
1971	188,533	-	-	188,533	-	-	-	-	-	-	-	-	-	1,061	0	1,061	189,594
1972	136,711	12,898	1,313	150,922	-	-	-	-	-	-	-	-	-	1,254	0	1,254	152,176
1973	173,783	45,304	-	219,087	-	-	-	-	-	-	-	-	-	13,003	0	13,003	232,090
1974	176,036	53,540	552	230,128	9,213	-	9,213	23,551	-	23,551	26,884	-	26,884	59,648	0	59,648	289,776
1975	158,183	51,666	5,590	215,439	13,666	-	13,666	27,212	-	27,212	18,692	-	18,692	59,570	0	59,570	275,009
1976	105,851	21,212	4,250	131,313	1,742	-	1,742	5,387	-	5,387	17,948	-	17,948	25,077	0	25,077	156,390
1977	131,758	51,994	15,851	199,603	13,980	-	13,980	25,730	-	25,730	18,673	-	18,673	58,383	0	58,383	257,986
1978	127,947	51,646	11,527	191,120	10,988	1,721	12,709	21,016	5,220	26,236	13,259	3,687	16,946	45,263	10,628	55,891	247,011
1979	109,406	94,042	25,955	229,403	48,899	3,199	52,098	47,459	8,097	55,556	34,185	7,170	41,355	130,543	18,466	149,009	378,412
1980	106,829	83,881	13,519	204,229	27,978	4,347	32,325	41,771	605	42,376	19,452	68	19,520	89,201	5,020	94,221	298,450
1981	167,834	154,883	19,043	341,760	12,082	1,311	13,393	86,620	6,955	93,575	25,989	3,019	29,008	124,691	11,285	135,976	477,736
1982	97,484	96,581	5,815	199,880	3,894	167	4,061	13,593	42	13,635	6,820	596	7,416	24,307	805	25,112	224,992
1983	124,371	85,645	10,018	220,034	4,482	1,963	6,445	43,993	0	43,993	34,089	3,101	37,190	82,564	5,064	87,628	307,662
1984	78,751	70,803	6,429	155,983	7,625	2,215	9,840	24,060	57	24,117	20,564	56	20,620	52,249	2,328	54,577	210,560
1985	129,948	40,490	5,164	175,602	24,452	2,525	26,977	25,338	0	25,338	42,352	0	42,352	92,142	2,525	94,667	270,269
1986	59,352	51,307	2,793	113,452	2,045	0	2,045	22,053	395	22,448	1,892	182	2,074	25,990	577	26,567	140,019
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	44,890	31,845	2,090	78,825	15,662	1,421	17,083	16,989	0	16,989	21,844	1,806	23,650	54,495	3,227	57,722	136,547
1989	74,235	97,558	15,332	187,125	11,776	3,407	15,183	18,215	3,989	22,204	49,090	7,353	56,443	79,081	14,749	93,830	280,955
1990	25,269	37,077	3,715	66,061	4,989	2,351	8,166	7,778	1,058	8,976	43,182	7,535	50,975	55,949	10,944	68,117	134,178
1991	59,724	102,628	9,213	171,565	3,737	1,616	6,091	27,355	3,625	32,114	28,195	14,154	44,448	59,287	19,395	82,653	254,218
1992	0	0	0	0	0	0	0	0	0	0	15,721	2,806	19,022	15,721	2,806	19,022	19,022
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	3,630	0	3,630	1	3,276	4,369	3,631	3,276	7,999	7,999
1995	79,345	90,831	0	170,176	2,924	4,126	8,731	9,778	18,815	30,033	67,855	9,560	74,117	80,557	32,501	112,881	283,057
5 Yr. Ave 1985-89	61,685	44,240	5,076	111,001	10,787	1,471	12,258	16,519	877	17,396	23,036	1,868	24,904	50,342	4,216	54,557	165,558
5 Yr. Ave 1990-94	16,999	27,941	2,586	47,525	1,745	793	2,851	7,753	937	8,944	17,420	5,554	23,763	26,918	7,284	35,558	83,083

^a Sales reported in numbers of fish sold in the round and pounds of unprocessed roe, which may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho roe from fall chum roe. Does not include department test fish sales.

^b All fish sold in the round. Includes department test fish sales prior to 1988.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

^d In 1974, District 4 was subdivided to include Districts 5 and 6.

^e Does not include 884 female fall chum salmon sold in Subdistrict 6-C with roe extracted and roe sold separately. Females are accounted for in the estimated harvest to produce roe sold.

Table 7. Commercial coho salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1961-1995.

Upper Yukon Area																	
Lower Yukon Area					District 4			District 5			District 6			Subtotal			Total Estimated Harvest
Year	District 1	District 2	District	Subtotal	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	
1961	2,855	-	-	2,855	-	-	-	-	-	-	-	-	-	0	0	0	2,855
1962	22,926	-	-	22,926	-	-	-	-	-	-	-	-	-	0	0	0	22,926
1963	5,572	-	-	5,572	-	-	-	-	-	-	-	-	-	0	0	0	5,572
1964	2,446	-	-	2,446	-	-	-	-	-	-	-	-	-	0	0	0	2,446
1965	350	-	-	350	-	-	-	-	-	-	-	-	-	0	0	0	350
1966	19,254	-	-	19,254	-	-	-	-	-	-	-	-	-	0	0	0	19,254
1967	9,925	-	1,122	11,047	-	-	-	-	-	-	-	-	-	0	0	0	11,047
1968	13,153	-	150	13,303	-	-	-	-	-	-	-	-	-	0	0	0	13,303
1969	13,989	-	1,009	14,998	-	-	-	-	-	-	-	-	-	0	0	95	15,093
1970	12,632	-	-	12,632	-	-	-	-	-	-	-	-	-	0	0	556	13,188
1971	12,165	-	-	12,165	-	-	-	-	-	-	-	-	-	0	0	38	12,203
1972	21,705	506	-	22,211	-	-	-	-	-	-	-	-	-	0	0	22	22,233
1973	34,860	1,781	-	36,641	-	-	-	-	-	-	-	-	-	0	0	0	36,641
1974	13,713	176	-	13,889	0	-	0	1,409	-	1,409	1,479	-	1,479	2,888	0	2,888	16,777
1975	2,288	200	-	2,488	0	-	0	5	-	5	53	-	53	58	0	58	2,546
1976	4,064	17	-	4,081	0	-	0	0	-	0	1,103	-	1,103	1,103	0	1,103	5,184
1977	31,720	5,319	538	37,577	0	-	0	2	-	2	1,284	-	1,284	1,286	0	1,286	38,863
1978	16,460	5,835	758	23,053	32	-	32	1	-	1	3,066	-	3,066	3,099	0	3,099	26,152
1979	11,369	2,850	-	14,219	155	-	155	0	-	0	2,791	-	2,791	2,946	0	2,946	17,165
1980	4,829	2,660	-	7,489	30	-	30	0	-	0	1,226	-	1,226	1,256	0	1,256	8,745
1981	13,129	7,848	419	21,396	0	-	0	0	-	0	2,284	-	2,284	2,284	0	2,284	23,680
1982	15,115	14,179	87	29,381	15	-	15	0	-	0	7,780	-	7,780	7,795	0	7,795	37,176
1983	4,595	2,557	-	7,152	0	-	0	0	-	0	6,168	-	6,168	6,168	0	6,168	13,320
1984	29,472	43,064	621	73,157	1,095	-	1,095	0	-	0	7,688	-	7,688	8,783	0	8,783	81,940
1985	27,676	17,125	171	44,972	938	-	938	0	-	0	11,762	-	11,762	12,700	0	12,700	57,672
1986	24,824	21,197	793	46,814	0	-	0	0	-	0	441	-	441	441	0	441	47,255
1987	0	0	0	0	0	-	0	0	-	0	0	-	0	0	0	0	0
1988	36,028	34,758	1,419	72,205	2	-	2	8	-	8	13,972	-	13,972	13,982	0	13,982	86,187
1989	22,987	38,402	3,988	65,377	3	-	3	84	-	84	16,084	-	16,084	16,171	0	16,171	81,548
1990	12,160	16,405	918	29,483	0	-	0	0	-	0	11,549	4,042	14,804	11,549	4,042	14,804	44,287
1991	54,095	40,898	1,905	96,898	14	0	14	0	0	0	6,268	4,299	9,774	6,282	4,299	9,788	106,686
1992	0	0	0	0	0	0	0	0	0	0	6,556	1,680	7,979	6,556	1,680	7,979	7,979
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	120	5,588	4,451	120	5,588	4,451	4,451
1995	21,625	18,488	0	40,113	0	0	0	0	0	0	5,826	2,229	6,900	5,826	2,229	6,900	47,013
5 Yr Ave 1985-89	22,303	22,296	1,274	45,874	189	-	189	-	-	-	8,452	-	8,452	8,659	-	8,659	54,532
5 Yr Ave 1990-94	13,251	11,461	565	25,276	3	-	3	0	0	0	4,899	3,122	7,402	4,901	3,122	7,404	32,681

^a Sales reported in numbers of fish sold in the round and pounds of roe. Since 1990, efforts were made to separate coho and fall chum salmon roe. Does not include department test fish sales.

^b All sales are fish in the round. Includes department test fish sales prior to 1988.

^c The estimated harvest is the fish sold in the round plus the estimated number of females caught to produce the roe sold.

^d In 1974, District 4 was subdivided to include Districts 5 and 6.

^e Does not include 438 female coho salmon sold in District 6-C with roe extracted and roe sold separately. These fish are included in estimated harvest to produce roe sold.

Table 8. Value of commercial salmon fishery to Yukon Area fishermen, 1977-1995.

Year	Chinook					Summer Chum				
	Lower Yukon		Upper Yukon			Lower Yukon		Upper Yukon		
	\$/lb	Value	\$/lb	\$/Roe	Value	\$/lb	Value	\$/lb	\$/Roe	Value
1977	0.85	1,841,033	1.37		148,766	0.40	1,007,280	0.27	2.66	306,481
1978	0.90	2,048,674	0.87		66,472	0.45	2,071,434	0.24	N/A	655,738
1979	1.09	2,763,433	1.00		124,230	0.52	2,242,564	0.25	3.00	444,924
1980	1.04	3,409,105	0.85		113,662	0.20	1,027,738	0.23	2.50	627,249
1981	1.20	4,420,669	1.00		206,380	0.40	2,741,178	0.20	3.00	699,876
1982	1.41	3,768,107	1.02		162,699	0.40	1,237,735	0.18	2.75	452,837
1983	1.40	4,093,562	1.08		105,584	0.34	1,734,270	0.16	1.66	281,883
1984	1.50	3,510,923	0.95		102,354	0.26	926,922	0.23	1.78	382,776
1985	1.50	4,294,432	0.86		82,644	0.35	1,032,700	0.23	1.94	593,801
1986	1.63	3,165,078	0.89		73,363	0.38	1,746,455	0.22	2.08	634,091
1987	1.98	5,428,933	0.79		136,196	0.48	1,313,618	0.19	2.22	323,611
1988	2.97	5,463,800	1.04		142,284	0.66	5,001,100	0.23	4.33	1,213,991
1989	2.77	5,181,700	0.84		108,178	0.34	2,217,700	0.24	4.41	1,377,117
1990	2.84	4,820,859	0.72		105,295	0.24	497,571	0.11	4.41	506,611
1991	3.70	7,128,300	0.70	2.92	97,140	0.36	782,300	0.18	4.21	627,177
1992	4.12	9,957,002	0.91	2.82	168,999	0.27	606,976	0.30	4.53	525,204
1993	2.70	4,884,044	1.06	5.52	113,217	0.37	226,772	0.35	8.53	203,762
1994	2.07	4,169,270	0.92	3.11	124,270	0.21	79,206	0.20	3.77	396,685
1995	2.09	5,317,508	0.77	2.64	87,059	0.16	241,598	0.13	3.58	1,060,322
5 Yr Ave 1990-1994	3.09	6,191,895	0.86		121,784	0.29	438,565	0.23	5.09	451,888

	Fall Chum					Coho					Total Value
	Lower Yukon		Upper Yukon			Lower Yukon		Upper Yukon			
	\$/lb	Value	\$/lb	\$/Roe	Value	\$/lb	Value	\$/lb	\$/Roe	Value	
1977	0.45	718,571	0.22		102,170	0.50	140,914	0.27		2,251	4,267,466
1978	0.47	691,854	0.25		103,091	0.60	96,823	0.24		6,105	5,740,191
1979	0.68	1,158,485	0.29		347,814	0.80	83,466	0.25		6,599	7,171,515
1980	0.28	394,162	0.27		198,088	0.36	17,374	0.29		2,374	5,789,752
1981	0.55	1,503,744	0.35		356,805	0.60	87,385	0.35		4,568	10,020,605
1982	0.55	846,492	0.28		53,258	0.69	135,828	0.37		18,786	6,675,742
1983	0.34	591,011	0.19		128,950	0.35	17,497	0.31		11,472	6,964,229
1984	0.32	374,359	0.26		103,417	0.50	256,050	0.24		12,823	5,669,624
1985	0.47	634,616	0.25		178,125	0.53	176,254	0.33		26,797	7,019,369
1986	0.49	399,321	0.14		30,309	0.71	211,942	0.21		556	6,261,115
1987	-	0	-		0	-	0	-		0	7,202,358
1988	1.01	638,700	0.32		151,300	1.38	734,400	0.37		34,116	13,379,691
1989	0.50	713,400	0.28		223,996	0.66	323,300	0.35		33,959	10,179,350
1990	0.45	238,165	0.34		174,965	0.66	137,302	0.34		37,026	6,517,794
1991	0.34	438,310	0.23	3.56	157,831	0.44	300,182	0.30	2.50	21,556	9,552,796
1992	-	0	0.39	4.50	54,161	-	0	0.39	2.18	19,529	11,331,871
1993	-	0	-	-	0	-	0	-	-	0	5,427,794
1994	-	0	0.16	1.50	8,517	-	0	0.48	1.50	8,739	4,786,687
1995	0.15	185,036	0.13	2.96	167,571	0.29	80,019	0.14	2.51	11,289	7,150,402
5 Yr Ave 1990-1994	0.16	135,295	0.22		79,095	0.22	87,497	0.30		17,370	7,523,388

Table 9. Canadian catch of Yukon River chinook salmon, 1961-1995.

Year	Mainstem Yukon River Harvest					Total	Porcupine River Aboriginal Fishery Harvest	Total Canadian Harvest
	Commercial	Domestic	Aboriginal Fishery	Sport *	Combined Non-Commercial			
1961	3,446		9,300		9,300	12,746	500	13,246
1962	4,037		9,300		9,300	13,337	600	13,937
1963	2,283		7,750		7,750	10,033	44	10,077
1964	3,208		4,124		4,124	7,332	76	7,408
1965	2,265		3,021		3,021	5,286	94	5,380
1966	1,942		2,445		2,445	4,387	65	4,452
1967	2,187		2,920		2,920	5,107	43	5,150
1968	2,212		2,800		2,800	5,012	30	5,042
1969	1,640		957		957	2,597	27	2,624
1970	2,611		2,044		2,044	4,655	8	4,663
1971	3,178		3,260		3,260	6,438	9	6,447
1972	1,769		3,960		3,960	5,729		5,729
1973	2,199		2,319		2,319	4,518	4	4,522
1974	1,808	406	3,342		3,748	5,556	75	5,631
1975	3,000	400	2,500		2,900	5,900	100	6,000
1976	3,500	500	1,000		1,500	5,000	25	5,025
1977	4,720	531	2,247		2,778	7,498	29	7,527
1978	2,975	421	2,485		2,906	5,881		5,881
1979	6,175	1,200	3,000		4,200	10,375		10,375
1980	9,500	3,500	7,546	300	11,346	20,846	2,000	22,846
1981	8,593	237	8,879	300	9,416	18,009	100	18,109
1982	8,640	435	7,433	300	8,168	16,808	400	17,208
1983	13,027	400	5,025	300	5,725	18,752	200	18,952
1984	9,885	260	5,850	300	6,410	16,295	500	16,795
1985	12,573	478	5,800	300	6,578	19,151	150	19,301
1986	10,797	342	8,625	300	9,267	20,064	300	20,364
1987	10,864	330	6,069	300	6,699	17,563	51	17,614
1988	13,217	282	7,178	650	8,110	21,327	100	21,427
1989	9,789	400	6,930	300	7,630	17,419	525	17,944
1990	11,324	247	7,109	300	7,656	18,980	258	19,238
1991	10,906	227	9,011	300	9,538	20,444	163	20,607
1992	10,877	277	6,349	300	6,926	17,803	100	17,903
1993	10,350	243	5,576	300	6,119	16,469	142	16,611
1994	12,028	373	8,089	300	8,762	20,790	428	21,218
1995 ^b	11,344	300	7,576	700	8,576	19,920	460	20,380
Average								
1961-84	4,367	754	4,313	300	4,721	9,087	235	9,293
1985-89	11,448	366	6,920	370	7,657	19,105	225	19,330
1990-94	11,097	273	7,227	300	7,800	18,897	218	19,115

* Sport fish harvest unknown prior to 1980.

^b Preliminary.

Table 10. Canadian catch of Yukon River fall chum salmon 1961-1995.

Year	Mainstem Yukon River Harvest					Porcupine River Aboriginal Fishery Harvest	Total Canadian Harvest
	Commercial	Domestic	Aboriginal Fishery	Combined Non-Commercial	Total		
1961	3,276		3,800	3,800	7,076	2,000	9,076
1962	936		6,500	6,500	7,436	2,000	9,436
1963	2,196		5,500	5,500	7,696	20,000	27,696
1964	1,929		4,200	4,200	6,129	6,058	12,187
1965	2,071		2,183	2,183	4,254	7,535	11,789
1966	3,157		1,430	1,430	4,587	8,605	13,192
1967	3,343		1,850	1,850	5,193	11,768	16,961
1968	453		1,180	1,180	1,633	10,000	11,633
1969	2,279		2,120	2,120	4,399	3,377	7,776
1970	2,479		612	612	3,091	620	3,711
1971	1,761		150	150	1,911	15,000	16,911
1972	2,532			0	2,532	5,000	7,532
1973	2,806		1,129	1,129	3,935	6,200	10,135
1974	2,544	466	1,636	2,102	4,646	7,000	11,646
1975	2,500	4,600	2,500	7,100	9,600	11,000	20,600
1976	1,000	1,000	100	1,100	2,100	3,100	5,200
1977	3,990	1,499	1,430	2,929	6,919	5,560	12,479
1978	3,356	728	482	1,210	4,566	5,000	9,566
1979	9,084	2,000	11,000	13,000	22,084		22,084
1980	9,000	4,000	3,218	7,218	16,218	6,000	22,218
1981	15,260	1,611	2,410	4,021	19,281	3,000	22,281
1982	11,312	683	3,096	3,779	15,091	1,000	16,091
1983	25,990	300	1,200	1,500	27,490	2,000	29,490
1984	22,932	535	1,800	2,335	25,267	4,000	29,267
1985	35,746	279	1,740	2,019	37,765	3,500	41,265
1986	11,464	222	2,200	2,422	13,886	657	14,543
1987	40,591	132	3,622	3,754	44,345	135	44,480
1988	30,263	349	1,882	2,231	32,494	1,071	33,565
1989	17,549	100	2,462	2,562	20,111	2,909	23,020
1990	27,537	0	3,675	3,675	31,212	2,410	33,622
1991	31,404	0	2,438	2,438	33,842	1,576	35,418
1992	18,576	0	304	304	18,880	1,935	20,815
1993	7,762	0	4,660	4,660	12,422	1,668	14,090
1994	30,035	0	5,319	5,319	35,354	2,654	38,008
1995 *	39,012	0	951	951	39,963	438	40,401
Average							
1961-84	5,674	1,584	2,588	3,206	8,881	6,340	14,957
1985-89	27,123	216	2,381	2,598	29,720	1,654	31,375
1990-94	23,063	0	3,279	3,279	26,342	2,049	28,391

* Preliminary.

Table 11. Subsistence and personal use salmon catch in the Yukon River drainage in Alaska, 1961-1994. a,b

Year	Chinook	Summer chum		Fall Chum c		Coho e	Total
		Reported	Estimated Use	Reported	Estimated Use		
1961	21,488	305,317	305,317	101,772	101,772	9,192	437,769
1962	11,110	261,856	261,856	87,285	87,285	9,480	369,731
1963	24,862	297,094	297,094	99,031	99,031	27,699	448,686
1964	16,231	361,080	361,080	120,360	120,360	12,187	509,858
1965	16,608	336,848	336,848	112,283	112,283	11,789	477,528
1966	11,572	154,508	154,508	51,503	51,503	13,192	230,775
1967	16,448	206,233	206,233	68,744	68,744	17,164	308,589
1968	12,106	133,880	133,880	44,627	44,627	11,613	202,226
1969	14,000	156,191	156,191	52,063	52,063	7,776	230,030
1970	13,874	166,504	166,504	55,501	55,501	3,966	239,845
1971	25,684	171,487	171,487	57,162	57,162	16,912	271,245
1972	20,258	108,006	108,006	36,002	36,002	7,532	171,798
1973	24,317	161,012	161,012	53,670	53,670	10,236	249,235
1974	19,964	227,811	227,811	93,776	93,776	11,646	353,197
1975	13,045	211,888	211,888	86,591	86,591	20,708	332,232
1976	17,806	186,872	186,872	72,327	72,327	5,241	282,246
1977	17,581	159,502	159,502	82,771	82,771	16,333	276,187
1978	30,297	188,303	197,144	84,239	94,867	7,787	330,095
1979	31,005	191,287	196,187	214,881	233,347	9,794	470,333
1980	42,724	167,705	272,398	167,637	172,657	20,158	507,937
1981	29,690	117,629	208,284	177,240	188,525	21,228	447,727
1982	28,158	117,413	260,969	132,092	132,897	35,894	457,918
1983	49,478	149,180	240,386	187,864	192,928	23,895	506,687
1984	42,428	166,630	230,747	172,495	174,823	49,020	497,018
1985	39,771	157,744	264,828	203,947	206,472	32,264	543,335
1986	45,238	182,337	290,825	163,466	164,043	34,468	534,574
1987	53,124	174,940	275,914	361,663 d	361,663	84,894 d	775,595
1988	46,590	198,806	311,724	155,467	158,694	70,285	587,293
1989	47,213	169,046	249,582	216,229	230,978	42,241	570,014
1990	52,550	117,436	201,839	173,076	185,244	48,971	488,604
1991	45,621	118,540	275,673	145,524	168,890	37,388	527,572
1992	45,626	125,497	261,448	107,602	110,903	51,921	469,898
1993	62,912	106,054	138,867	76,925	76,925	15,772	477,455
1994	54,563	132,510	245,973	123,218	127,586	44,594	728,444
5 Yr. Avg							
1985-89	46,387	176,575	278,575	220,154	224,370	52,830	602,162
5 Yr. Avg							
1990-94	52,254	120,007	224,760	125,269	133,910	39,729	538,395

a Includes personal use catches beginning in 1987 and ending in June 1990. Does not include usage of salmon from commercial related harvest to produce roe sales.

b Catches estimated for 1961-1976. Catches of salmon other than chinook salmon were not differentiated by species until 1977.

c Minimum estimates for 1961-1978 because surveys were typically conducted before the end of the season.

d Includes illegal sales involving an additional estimated 115,829 fall chum and 36,291 coho salmon in Districts 5 and 6.

e Includes salmon harvested solely for subsistence, plus an estimated of the number of salmon carcasses harvested for the commercial production of salmon roe and used for subsistence.

Table 12. Estimates of salmon passage on the mainstem Yukon River using 120 kHz sonar equipment at Pilot Station, 1993-1995.

Year	Dates of Operation	Chinook	Summer Chum	Fall Chum	Coho ^a	Other Fish ^b
1993 ^c	6/04-8/31	135,000	947,000	292,000	42,000	351,000 ^d
1994 ^c	6/04-9/08	141,000	1,997,000	407,000	191,000	271,000 ^d
1995 ^f	6/07-9/03	263,000	3,667,000	1,247,000	155,000	620,000

^a Passage estimates for coho salmon are incomplete. The sonar project is terminated prior to the end of the coho salmon run.

^b "Other Fish" may include pink salmon (which are substantially more abundant in even-numbered years), whitefish, sheefish, northern pike, and other species. These estimates are not total passage estimates but are merely expanded estimates of the number of fish in the acoustical beam.

^c Chart recording traces of fish or debris judged to be travelling downstream, and an associated portion of traces with no discernible direction of travel, were not included in passage estimate calculations.

^d Does not include fish passing near shore on the left (south) bank.

^f All chart recording traces of fish were assumed to be travelling upstream, and, therefore, included in passage estimate calculations.

Table 13. Chinook salmon escapement counts for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1961-1995 ^a

Year	Andreafsky River			Anvik River		Nulato River			Gisasa River		Chena River			Salcha River		
	East Fork		West Fork Aerial	Aerial River ^b	Index Area ^b	Aerial		Mainstem Tower Counts	Aerial	Weir	Pop. Est. or Tower Counts	Aerial		Pop. Est. or Tower Counts	Aerial	
	Aerial	Tower or Weir Cnt				North Fork ^c	South Fork					River	Index Area ^d		River	Index Area ^f
1961	1,003			1,226		376 ^g	167		266 ^g						2,878	
1962	675 ^g		762 ^g									61 ^{g, h}			937	
1963												137 ^g				
1964	867		705												450	
1965			344 ^g	650 ^g											408	
1966	361		303	638											800	
1967			276 ^g	336 ^g												
1968	380		383	310 ^g											739	
1969	274 ^g		231 ^g	296 ^g											461 ^g	
1970	665		574 ^g	368								6 ^g			1,882	
1971	1,904		1,682									193 ^{g, h}			158 ^g	
1972	798		582 ^g	1,198								138 ^{g, h}			1,193	1,034
1973	825		788	613								21 ^g			391	352 ⁱ
1974			285	471 ^g		55 ^g	23 ^g		161			1,016 ^h	959 ^h		1,857	1,620
1975	993		301	730		123	81		385			316 ^h	262 ^h		1,055	950 ⁱ
1976	818		643	1,053		471	177		332			531	496		1,641	1,473
1977	2,008		1,499	1,371		286	201		255			563			1,202	1,052
1978	2,487		1,062	1,324		498	422		45 ^g			1,726			3,499	3,258
1979	1,180		1,134	1,484		1,093	414		484			1,159 ^g			4,789	4,310 ^j
1980	958 ^g		1,500	1,330	1,192	954 ^g	369 ^g		951			2,541			6,757	6,126
1981	2,146 ^g		231 ^g	807 ^g	577 ^g		791					600 ^g			1,237	1,121
1982	1,274		851						421			2,073			2,534	2,346
1983				653 ^g	376 ^g	526	480		572			2,553	2,336		1,961	1,803
1984	1,573 ^g		1,993	641 ^g	574 ^g							501	494		1,031	906
1985	1,617		2,248	1,051	720	1,600	1,180		735			2,553	2,262		2,035	1,860
1986	1,954	1,530 ^k	3,158	1,118	918	1,452	1,522		1,346		9,065 ^m	2,031	1,935		3,368	3,031 ⁱ
1987	1,608	2,011 ^k	3,281	1,174	879	1,145	493		731		6,404 ^m	1,312	1,209	4,771 ^m	1,898	1,671
1988	1,020	1,339 ^k	1,448	1,805	1,449	1,061	714		797		3,346 ^m	1,966	1,760	4,562 ^m	2,761	2,553
1989	1,399		1,089	442 ^g	212 ^g						2,666 ^m	1,280	1,185	3,294 ^m	2,333	2,136
1990	2,503		1,545	2,347	1,595	568 ^g	430 ^{g, n}		884 ^g		5,603 ^m	1,436	1,402	10,728 ^m	3,744	3,429
1991	1,938		2,544	875 ^g	625 ^g	767	1,253		1,690		3,025 ^m	1,277 ^g	1,277 ^g	5,608 ^m	2,212 ^g	1,925 ^g
1992	1,030 ^g		2,002 ^g	1,536	931	348	231		910		5,230 ^m	825 ^g	799 ^g	7,862 ^m	1,484 ^g	1,436 ^g
1993	5,855		2,765	1,720	1,526	1,844	1,181		1,573		12,241 ^k	2,943	2,660	10,007 ^k	3,636	3,562
1994 ^v	300 ^g	7,801 ^{p, r}	213 ^g	913 ^g				1,795 ^s	2,775	2,888 ^{p, t}	11,877 ^k	1,570	1,570	18,399 ^k	11,823	11,189
1995	1,635	5,841	1,108	1,996	1,147	968	681	1,412	410	4,023	11,616 ^m	3,575	3,039	13,537 ^k	3,978	3,734
E.O. ^w	>1,500		>1,400	>1,300 ^x	>500 ^x	>800	>500		>600				>1,700			>2,500

continued

Table 13. (page 2 of 2).

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- ^a Data obtained by aerial survey unless otherwise noted. Only peak counts are listed. Survey rating is fair to good, unless otherwise noted. Latest table revision 08-Jan-96
 - ^b From 1961-1970, river count data are from aerial surveys of various segments of the mainstem Anvik River. From 1972-1979, counting tower operated; mainstem aerial survey counts below the tower were added to tower counts. From 1980-present, aerial survey counts for the river are best available minimal estimates for the entire Anvik River drainage. Index area counts are from the mainstem Anvik River between the Yellow River and McDonald Creek.
 - ^c Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted
 - ^d Chena River index area for assessing the escapement objective is from Moose Creek Dam to Middle Fork River.
 - ^e Salcha River index area for assessing the escapement objective is from the TAPS crossing to Caribou Creek.
 - ^f Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
 - ^h Boat survey.
 - ^j Data unavailable for index area. Calculated from historic (1972-91) average ratio of index area counts to total river counts (0.90:1.0).
 - ^k Tower Counts
 - ^m Population estimate
 - ⁿ Mainstem counts below the confluence of the North and South Forks Nulato River included in the South Fork counts.
 - ^p Weir Counts
 - ^r Weir installed on June 29; first full day of counts June 30.
 - ^s Tower counts delayed until June 29 because of high, turbid water. First full day of counts occurred on June 30.
 - ^t Weir installed on July 11; first full day of counts July 12.
 - ^v Preliminary.
 - ^w Interim escapement goals. Established March, 1992.
 - ^x Interim escapement goal for the entire Anvik River drainage is 1,300 salmon. Interim escapement objective for mainstem Anvik River between the Yellow River and McDonald Creek is 500 salmon.

Table 14. Chinook salmon escapement counts for selected spawning areas in the Canadian portion of the Yukon River drainage, 1961-1995.

Year	Tincup Creek ^a	Tatchun River ^{a, b}	Little Salmon River ^a	Big Salmon River ^{a, c}	Nisutlin River ^{a, d}	Ross River ^{a, f}	Wolf River ^{a, g}	Whitehorse Fishway ^h	Canada Mainstem Tagging Estimate ⁱ
1961								1,068	
1962								1,500	
1963								483	
1964								595	
1965								903	
1966		7 ^k						563	
1967								533	
1968			173 ^k	857 ^k	407 ^k	104 ^k		414	
1969			120	286	105			334	
1970		100		670	615		71 ^k	625	
1971		130	275	275	650		750	856	
1972		80	126	415	237		13	391	
1973		99	27 ^k	75 ^k	36 ^k			224	
1974		192		70 ^k	48 ^k			273	
1975		175		153 ^k	249		40 ^k	313	
1976		52		86 ^k	102			121	
1977		150	408	316 ^k	77			277	
1978		200	330	524	375			725	
1979		150	489 ^k	632	713		183 ^k	1,184	
1980		222	286 ^k	1,436	975		377	1,383	
1981		133	670	2,411	1,626	949	395	1,555	
1982		73	403	758	578	155	104	473	19,790
1983	100	264	101 ^k	540	701	43 ^{k, n}	95	905	28,989
1984	150	153	434	1,044	832	151 ^k	124	1,042	27,616 ^m
1985	210	190	255	801	409	23 ^k	110	508	10,730
1986	228	155	54 ^k	745	459 ^k	72 ⁿ	109	557	16,415
1987	100	159	468	891	183	180 ^k	35	327	13,260
1988	204	152	368	765	267	242	66	405	23,118
1989	88	100	862	1,662	695	433 ^p	146	549	25,201
1990	83	643	665	1,806	652	457 ^k	188	1,407	37,699
1991			326	1,040		250	201 ^r	1,266	20,743
1992	73	106	494	617	241	423	110 ^r	758	25,497
1993		183	184	572	339	400	168 ^r	668	28,558
1994 ^s	101 ^k	477	726	1,764	389	506	393 ^r	1,577 ^t	25,890
1995 ^s	121	397	781	1,314	274	229 ^k	253 ^r	2,103	32,168
E.O.									33,000 - 43,000 ^q

continued

Table 14. (page 2 of 2).

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- ^a Data obtained by aerial survey unless otherwise noted. Only peak counts are listed. Survey rating is fair to good, unless otherwise noted. Latest table revision: December 19, 1995.
 - ^b All foot surveys except 1978 (boat survey) and 1986 (aerial survey).
 - ^c For 1968, 1970, and 1971 counts are from mainstem Big Salmon River. For all other years counts are from the mainstem Big Salmon River between Big Salmon Lake and the vicinity of Souch Creek.
 - ^d One Hundred Mile Creek to Sidney Creek.
 - ^f Big Timber Creek to Lewis Lake.
 - ^g Wolf Lake to Red River.
 - ^h Includes 50, 90, 292, 506, 243, 288, 879, and 757 fin-clipped hatchery-origin salmon in 1988, 1989, 1990, 1991, 1992, 1993, 1994, and 1995 respectively. Note that the 1994 count is presently under review because a number of fin-clipped fish were double-counted.
 - ^j Estimated total spawning escapement excluding Porcupine River (estimated border escapement minus the Canadian catch).
 - ^k Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
 - ^m Estimate derived by dividing the annual 5-area (Whitehorse Fishway, Big Salmon, Nisutlin, Wolf, Tatchun) count by the average proportion of the annual 5-area index count to the estimated spawning escapement from the DFO tagging study for years 1983, 1983, and 1985-1989.
 - ⁿ Information on area surveyed is unavailable.
 - ^p Counts are for Big Timber Creek to Sheldon Lake.
 - ^r Counts are for Wolf Lake to Fish Lake outlet.
 - ^s Preliminary. Area surveyed unknown.
 - ^t Under review; a number of fin-clipped fish were double-counted.

Table 15. Summer chum salmon escapement counts for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1973-1995.

Year	Andreafsky River			Anvik River		Rodo River ^a	Kallag Cr. Tower Counts	Nulato River			Hogatz River				Tozitna River ^a	Chena River		Salcha River	
	East Fork		Tower & Aerial ^b					Sonar	Aerial	North Fork ^c	Mainstem Tower Counts	Clear & Caribou Cr.		Clear Creek Tower Counts		Aerial	Tower	Aerial	Tower
	Aerial ^a	Sonar, Tower, or Weir Cnts		West Fork ^a	Gisasa River							Weir							
													South Fork						
1973	10,149 ^d		51,835	249,015												79 ^d		290	
1974	3,215 ^d		33,578	411,133		16,137		29,016	29,334		22,022				1,823	4,349		3,510	
1975	223,485		235,954	900,967		25,335		51,215	87,280		56,904		22,355		3,512	1,670		7,573	
1976	105,347		118,420	511,475		38,258		9,230 ^d	30,771		21,342		20,744		725 ^d	685		6,484	
1977	112,722		63,120	358,771		16,118		11,385	58,275		2,204 ^d		10,734		761 ^d	610		677 ^d	
1978	127,050		57,321	307,270		17,845		12,821	41,659		9,280 ^d		5,102		2,262	1,609		5,405	
1979	66,471		43,391		280,537			1,506	35,598		10,962		14,221			1,025 ^d		3,060	
1980	36,823 ^d		114,759		492,676			3,702 ^d	11,244 ^d		10,388		19,786		580	338		4,140	
1981	81,555	147,312 ^f			1,486,182			14,348								3,500		8,500	
1982	7,501 ^d	181,352 ^f	7,267 ^d		444,581						334 ^d		4,984 ^d		874	1,509		3,756	
1983		110,608 ^f			362,912			1,263 ^d	19,749		2,356 ^d		28,141		1,604	1,097		716 ^d	
1984	95,200 ^d	70,125 ^f	238,565		891,028								184 ^d			1,861		9,810	
1985	66,146		52,750		1,080,243	24,576		10,494	19,344		13,232		22,566		1,030	1,005		3,178	
1986	83,931	167,614 ^d	99,373		1,189,602			16,848	47,417		12,114				1,778	1,509		8,028	
1987	6,687 ^d	45,221 ^d	35,535		455,876			4,094	7,163		2,123		5,669 ^d			333		3,657	
1988	43,056	68,937 ^d	45,432		1,125,449	13,872		15,132	26,951		9,284		6,890		2,983	432		2,889 ^d	
1989	21,460 ^d				636,906											714 ^d		1,574 ^d	
1990	11,519 ^d		20,426 ^d		403,627	1,941 ^d		3,196 ^{d, n}	1,419 ^d		450 ^d		2,177 ^d		36	245 ^d		450 ^d	
1991	31,886		46,657		847,772	3,977		13,150	12,491		7,003		9,947		93	115 ^d		154 ^d	
1992	11,308 ^d		37,808 ^d		775,626	4,465		5,322	12,358		9,300		2,986		794	848 ^d		3,222	
1993	10,935 ^d		9,111 ^d		517,409	7,867		5,486	7,698		1,581				970	168	5,487	212	
1994		200,981 ^{i, k}			1,124,689		47,295			148,762 ^m	6,827	51,116 ⁿ	8,247 ^o			1,137	10,108	4,916	
1995 ^w		172,148 ^{i, p}			1,339,418	12,849	73,940	10,875	29,949	236,890	6,458	136,886		116,735	4,985	185 ^d	3,475 ^d	934 ^d 31,329	
E.O. ^r	>109,000		>116,000		>500,000 ^s				>53,000 ^t				>17,000 ^v					>3,500	

^a Data obtained by aerial survey unless otherwise noted. Only peak counts are listed. Latest table revision: December 12, 1995.^b From 1972-1979 counting tower operated; escapement estimate listed is the tower counts plus expanded aerial survey counts below the tower (see Buklis 1982).^c Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted.^d Incomplete survey and/or poor survey timing or conditions resulted in minimal or inaccurate count.^f Sonar count.^g Tower count.^h Mainstem counts below the confluence of the North and South Forks Nulato River included in the South Fork counts.ⁱ Weir Count^j Weir installed on June 29. First full day of counts occurred on June 30.^k Tower counts delayed until June 29 because of high, turbid water. First full day of counts occurred on June 30.^l Weir installed on July 11. First full day of counts occurred on July 12.^m BLM helicopter survey.ⁿ Weir operated from June 16 - September 12. Passage of chum salmon from August 1 - September 12 was 2,584 fish.^o Tower operations were severely hampered because of high, turbid water which prohibited observations from the tower. Tower operated during the periods July 10 - 15 and from July 19 - 30, 1995.^p Interim escapement objective.^q The Anvik River Escapement Objective was rounded upward to 500,000 from 487,000 in March, 1992.^r Interim escapement objective for North Fork Nulato River only.^s Consists of Clear and Caribou Creeks interim escapement objectives of 9,000 and 8,000, respectively.^t Preliminary.

Table 16. Fall chum salmon escapement counts for selected spawning areas in Alaskan and Canadian portions of the Yukon River drainage 1971-1995. ^a

Year	Alaska				Canada					
	Toklat River ^b	Delta River ^c	Chandalar River ^d	Sheenjek River ^d	Fishing Branch River ^{f, g}	Mainstem Yukon River Index ^{g, h}	Koidern River ^g	Kluane River ^{g, j}	Testlin River ^{g, k}	Mainstem Tagging Estimate ^m
1971					312,800					
1972		5,384			35,125 ⁿ			198 ^{p, r}		
1973		10,469			15,989 ^s	383		2,500		
1974	41,798	5,915		89,966 ^t	32,525 ^s			400		
1975	92,265	3,734 ^v		173,371 ^t	353,282 ^s	7,671		362 ^r		
1976	52,891	6,312 ^v		26,354 ^t	36,584			20		
1977	34,887	16,876 ^v		45,544 ^t	88,400			3,555		
1978	37,001	11,136		32,449 ^t	40,800			0 ^r		
1979	158,336	8,355		91,372 ^t	119,898			4,640 ^r		
1980	26,346	5,137		28,933 ^t	55,268			3,150		
1981	15,623	23,508		74,560	57,386 ^w			25,806		
1982	3,624	4,235		31,421	15,901	1,020 ^x		5,378		31,958
1983	21,869	7,705		49,392	27,200	7,560		8,578 ^r		90,875
1984	16,758	12,411		27,130	15,150	2,800 ^y	1,300	7,200	200	56,633 ^z
1985	22,750	17,276 ^v		152,768	56,016 ^s	10,760	1,195	7,538	356	62,010
1986	17,976	6,703 ^v	59,313	84,207 ^{aa}	31,723 ^s	825	14	16,686	213	87,940
1987	22,117	21,180	52,416	153,267 ^{aa}	48,956 ^s	6,115	50	12,000		80,776
1988	13,436	18,024	33,619	45,206 ^{aa}	23,597 ^s	1,550	0	6,950	140	36,786
1989	30,421	21,342 ^v	69,161	99,116 ^{aa}	43,834 ^s	5,320	40	3,050	210 ^p	35,750
1990	34,739	8,992 ^v	78,631	77,750 ^{aa}	35,000 ^{ab}	3,651	1	4,683	739	51,755
1991	13,487	32,905 ^v		86,496 ^{ac}	37,733 ^s	2,426	53	11,675	468	78,461
1992	14,070	8,893 ^v		78,808 ^{ac}	22,517 ^s	4,438	4	3,339	450	49,082
1993	27,838	19,857		42,922 ^{ac}	28,707 ^s	2,620	0	4,610	555	29,743
1994	76,057	23,777 ^v		153,000 ^{ac, ad}	65,247 ^s	1,429 ^p	20 ^p	10,734	209 ^p	98,358
1995 ^{ad}	54,513 ^{ah}	20,587		235,000 ^{ac}	51,971 ^{s, aj}	4,701	0	16,456	633	158,240
E.O. ^{af}	> 33,000	> 11,000		> 64,000 ^{ag}	50,000 - 120,000					> 80,000

continued

Table 16.

(page 2 of 2).

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- ^a Latest table revision November 2, 1995.
 - ^b Expanded total abundance estimates for upper Toklat River index area using stream life curve (SLC) developed with 1987-1993 data. Index area includes Geiger Creek, Sushana River, and mainstem floodplain sloughs from approximately 0.25 mile upstream of roadhouse to approximately 1.25 mile downstream of roadhouse.
 - ^c Estimates are a total spawner abundance, generally from using spawner abundance curves and streamlife data.
 - ^d Side-scan sonar estimate, unless otherwise indicated.
 - ^f Located within the Canadian portion of the Porcupine River drainage. Total escapement estimated using weir to aerial survey expansion factor of 2.72, unless otherwise indicated
 - ^g Aerial survey count unless otherwise indicated.
 - ^h Tatchun Creek to Fort Selkirk.
 - ^j Duke River to end of spawning sloughs below Swede Johnston Creek.
 - ^k Boswell Creek area (5 km below to 5 km above confluence).
 - ^m Excludes Fishing Branch River escapement (estimated border passage minus Canadian removal).
 - ⁿ Weir installed on September 22. Estimate consists of a weir count of 17,190 after September 22, and a tagging passage estimate of 17,935 prior to weir installation.
 - ^p Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
 - ^r Foot survey
 - ^s Weir count.
 - ^t Total escapement estimate using sonar to aerial survey expansion factor of 2.22.
 - ^v Population estimate from replicate foot surveys and stream life data.
 - ^w Initial aerial survey count was doubled before applying the weir/aerial expansion factor of 2.72 since only half of the spawning area was surveyed.
 - ^x Boat survey.
 - ^y Total index area not surveyed. Survey included the mainstem Yukon River between Yukon Crossing to 30 km below Fort Selkirk.
 - ^z Escapement estimate based on mark-recapture program unavailable. Estimate based on assumed average exploitation rate.
 - ^{aa} Expanded estimates for period approximating second week August through middle fourth week September, using Chandalar River run timing data.
 - ^{ab} Weir was not operated. Although only 7,541 chum salmon were counted on a single survey flown October 26, a population estimate of approximately 27,000 fish was made through date of survey, based upon historic average aerial-to-weir expansion of 28%. Actual population of spawners was reported by DFO as between 30,000 - 40,000 fish considering aerial survey timing.
 - ^{ac} Total abundance estimates are for the period approximating second week August through middle fourth week of September. Comparatively escapement estimates prior to 1986 are considered more conservative; approximating the period of end of August through middle week of September.
 - ^{ad} Preliminary.
 - ^{af} Interim escapement objective.
 - ^{ag} Based on escapement estimates for years 1974-1990.
 - ^{ah} Minimal estimate because of late timing of ground surveys with respect to peak of spawning.
 - ^{ai} Minimal count because weir was submerged, but closed, during the period 31 August- 8 September because of high water.

Table 17. Coho salmon escapement counts for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1972-1995 ^a

Year	Andreafsky River		Anvik River	Kantishna River		Nenana River Drainage				Delta Clearwater River ^{f, g}	Clearwater Lake and Outlet	Richardson Clearwater River
	East Fork	West Fork		Geiger Creek ^b	Barton Creek	Lost Slough	Nenana Mainstem ^c	Wood Creek ^d	Seventeen Slough			
1972										630	417	454 ^k
1973										3,322	551 ^f	375 ^f
1974						1,388			27	3,954 ^j	560	652 ^f
1975						943			956	5,100	1,575 ^{f, h}	4 ^k
1976			467 ^k	25 ^j		118			281	1,920	1,500 ^{f, h}	80 ^k
1977			81 ^k	60		524 ^k		310 ^b	1,167	4,793	730 ^{f, h}	327
1978						350		300 ^b	466	4,798	570 ^{f, h}	
1979						227			1,987	8,970	1,015 ^{f, h}	372
1980				3 ^j		499 ^k		1,603 ^b	592	3,946	1,545 ^{f, h}	611
1981	1,657 ^k					274		849 ^{n, f}	1,005	8,563 ^p	459 ^k	550
1982				81				1,436 ^{n, f}		8,365 ^p		
1983				42		766		1,042 ⁿ	103	8,019 ^p	253	88
1984				20 ^j		2,677		8,826 ⁿ		11,061	1,368	428
1985				42 ^j		1,584		4,470 ⁿ	2,081	5,358	750	
1986				5	496	794		1,664 ⁿ	218 ^{d, h}	10,857	3,577	146 ^k
1987				1,175		2,511		2,387 ⁿ	3,802	22,300	4,225 ^{f, h}	
1988	1,913	830	1,203	159	437	348		2,046 ⁿ		21,600	825 ^{f, h}	
1989				155	12 ^k			412 ⁿ	824 ^k	11,000	1,600 ^{f, h}	483
1990				211		688	1,308		15 ^k	8,325	2,375 ^{f, h}	
1991				427	467 ^k	564	447		52	23,900	3,150 ^{f, h}	
1992				77	55 ^k	372			490	3,963	229 ^{f, h}	500 ^f
1993				138	141	484	419	666 ^{n, s}	581	10,875	3,525 ^{f, h}	
1994 ^t				410	2,000 ^{n, w}	944	1,647	1,317 ^{n, x}	2,909	62,675 ^y	3,425 ^{f, h}	5,800 ^f
1995	10,901 ^z				192 ⁿ					20,100		
E.O.										>9,000 ^u		

^a Only peak counts presented. Survey rating is fair to good, unless otherwise noted. Latest table revision: November 8, 1995.

^b Foot survey.

^c Mainstem Nenana River between confluences of Lost Slough and Teklanika River.

^d Surveyed by F.R.E.D.

^e Surveyed by Sport Fish Division.

^f Boat survey counts in the lower 17.5 river miles, unless otherwise indicated.

^g Boat Survey.

^h Aerial survey.

ⁱ Poor survey.

^j Weir count.

^k Expanded estimate based on partial survey counts and historic distribution of spawners from 1977-1980.

^l Coho weir was operated at the mouth of Clear Creek (Shores Landing).

^m Weir project terminated on October 4. Weir normally operated until mid to late October.

ⁿ Preliminary.

^o Interim escapement objective established March, 1993, based on boat survey counts of coho salmon in the lower 17.5 river miles during the period October 21-27.

^p A total of 298 coho salmon were passed between September 11 and October 4. However, it was estimated that 1,500 to 2,000 coho salmon passed the weir site within a 24-hour period beginning at approximately noon on October 4. Weir operated from August 18 through morning of October 5, 1994.

^q Weir project terminated September 27. Weir normally operated until mid-October.

^r An additional 17,565 coho salmon were counted by helicopter in the Delta Clearwater outside of the normal mainstem index area.

^s Weir count

Appendix A.1. Salmon fishery projects conducted in the Alaskan portion of the Yukon River drainage in 1995.

Project Name	Location	Primary Objective(s)	Duration	Agency	Responsibility
Commercial Catch and Effort Assessment	Alaskan portion of the Yukon River drainage	- document and estimate the catch and associated effort of the Alaskan Yukon River commercial salmon fishery via receipts (fish tickets) of commercial sales of salmon or salmon roe.	June - Sept.	ADF&G	all aspects
Commercial Catch Sampling and Monitoring	Alaskan portion of the Yukon River drainage	- determine age, sex, and size of salmon harvested in Alaskan Yukon River commercial fisheries; - monitor Alaskan commercial fishery openings and closures.	June - Sept.	ADF&G ADPS	all aspects enforcement
Subsistence Catch and Effort Assessment	Alaskan portion of the Yukon River drainage	- document and estimate the catch and associated effort of the Alaskan Yukon River subsistence salmon fishery via interviews, catch calendars, mail-out questionnaires, telephone interviews, and subsistence fishing permits.	post-season	ADF&G	all aspects
Sport Catch, Harvest and Effort Assessment	Alaskan portion of the Yukon River drainage	- document and estimate the catch, harvest, and associated effort of the Alaskan Yukon River sport fishery via post-season mail-out questionnaires.	post-season	ADF&G	all aspects
Yukon River (Alaskan Portion) Comprehensive Salmon Plan	Alaskan portion of the Yukon River drainage	- develop a comprehensive plan for restoration and enhancement of salmon stocks of the Alaskan portion of the Yukon River drainage; - define goals and objectives; - identify potential opportunities and concerns; - recommend appropriate procedures; - evaluate priorities.	ongoing	ADF&G , YRDLA, & USFWS	all aspects
Yukon River Salmon Stock Identification	Yukon River drainage	- estimate chinook salmon stock composition of the various Yukon River drainage harvests through analyses of scale patterns, age compositions, and geographical distribution of catches and escapements;	ongoing	ADF&G DFO & USFWS	all aspects provides scale samples
		- develop and improve genetic stock identification (GSI) techniques for identification of chum salmon harvests to region of origin;		ADF&G DFO & USFWS	all aspects provides samples
		- estimate stock compositions of mixed-stock salmon harvests collected in previous years;		USFWS ADF&G	all aspects assisted in Distr. 1 sampling
		- investigate the utility of mtDNA, microsatellite, and intron markers in identifying U.S./Canada fall chum salmon stocks. (new)		NBS USFWS & ADF&G	lead agency in pilot study participating in pilot study
Yukon River Salmon Escapement Surveys and Sampling	Alaskan portion of the Yukon River drainage	- estimate population size, or index the relative abundance, of chinook, chum, and coho salmon spawning escapements by aerial, foot, and boat surveys; - estimate age, sex, and size of selected tributary chinook, chum, and coho salmon spawning populations.	July - Nov.	ADF&G	all aspects
Lower Yukon Set Gillnet Test Fishing	South, Middle, and North mouths of the Yukon River delta, RM 20	- index chinook, summer and fall chum, and coho salmon run timing patterns using set gillnets; - index relative run strength of chinook and summer chum salmon using test fish CPUE; - sample captured salmon for age, sex, size composition information.	June - Sept.	ADF&G	all aspects
Mountain Village Drift Gillnet Test Fishing (new)	mainstem Yukon River, RM 87	- determine feasibility of using drift gillnets to index timing and relative abundance of fall chum and coho salmon runs.	Aug.	BSFA AVCP	all aspects provided partial funding
East Fork Andreafsky River Weir	mile 20 East Fork Andreafsky River, RM 124	- estimate daily escapement of chinook, summer chum, and coho (1995) salmon into the East Fork Andreafsky River; - estimate age, sex, and size composition of the chinook, summer chum, and coho (1995) salmon escapements.	June - Sept.	USFWS BSFA	all aspects provided funding for Aug. & Sept., 1995 operations

continued

Appendix A.1. (page 2 of 3).

Project Name	Location	Primary Objective(s)	Duration	Agency	Responsibility
Yukon River Sonar	Pilot Station, RM 123	- estimate chinook, summer and fall chum, and coho salmon passage in the mainstem Yukon River.	June - Sept.	ADF&G	all aspects
Anvik River Sonar	mile 40 Anvik River, RM 358	- estimate daily escapement of summer chum salmon into the Anvik River; - estimate age, sex, and size composition of the summer chum salmon escapement.	June - July	ADF&G	all aspects
Kaltag River Tower	mile 1 Kaltag Creek, RM 451	- estimate daily escapement of chinook and summer chum salmon into Kaltag Creek; - estimate age, sex, and size composition of the summer chum salmon escapement.	June - July	AK Cooperative Extension 4-H Prog. BSFA	all aspects provided partial funding
Nulato River Tower	mile 3 Nulato River, RM 486	- estimate daily escapement of summer chum and chinook salmon into the Nulato River; - estimate age, sex, and size composition of the summer chum salmon escapement.	June - July	TCC	all aspects
Gisasa River Weir	mile 3 Gisasa River, Koyukuk River drainage, RM 567	- estimate daily escapement of chinook and summer chum salmon into the Gisasa River; - estimate age, sex, and size composition of the chinook and summer chum salmon escapements.	June - Aug.	USFWS	all aspects
Clear Creek Tower (new)	mile 0 Clear Creek, Hogotza River drainage, Koyukuk River drainage, RM ~ 780	- estimate daily escapement of chinook and summer chum salmon into Clear Creek; - estimate age, sex, and size composition of the summer chum salmon escapement.	June - Aug.	TCC	all aspects
South Fork Koyukuk River Weir (new: site prep during 1995)	South Fork Koyukuk River near mouth of Fish Creek RM > 1,117	- estimate daily escapement of chinook, summer chum and fall chum salmon to the South Fork Koyukuk River - estimate age, sex, and size composition of the salmon escapement.	did not operate in 1995	USFWS	all aspects
Galena Fish Wheel Test Fishing (new)	mainstem Yukon River, RM 530	- index the timing of the fall chum salmon run in the mainstem Yukon River.	June - Aug.	BSFA	all aspects
Chandalar River Sonar	mile 14 Chandalar River, RM 996	- investigate feasibility of using split-beam sonar equipment to estimate fall chum salmon escapement.	Aug. - Sept.	USFWS	all aspects
Fort Yukon Fish Wheel Test Fishing (new)	mainstem Yukon River, RM 1,002	- index the timing of the fall chum salmon run in the mainstem Yukon River; - investigate the feasibility of detecting differences in run timing of Porcupine and mainstem Yukon River fall chum salmon stocks based on fish wheel placement; - provide educational opportunities for area students in the operation of a salmon run-timing project.	Aug. - Sept.	CATG	all aspects
Black River Weir (new)	mile 60 Black River, Porcupine River drainage, RM 1,086	- estimate daily escapement of fall chum salmon, and other fish species, which pass through the weir on the Black River; - estimate age, sex, and size composition of the fall chum salmon escapement, and of other fish species which pass through the weir; - provide educational opportunities for area students in the operation of a salmon escapement-monitoring project.	Aug. - Sept.	CATG USFWS	all aspects technical support and training
Sheenjek River Sonar	mile 6 Sheenjek River, Porcupine River drainage, RM 1,060	- estimate daily escapement of fall chum salmon into the Sheenjek River; - estimate age, sex, and size composition of the fall chum salmon escapement.	Aug. - Sept.	ADF&G	all aspects

continued

Project Name	Location	Primary Objective(s)	Duration	Agency	Responsibility
Fall Chum Salmon Radio Telemetry Investigation (new)	Upper Yukon River above the confluence of the Yukon and Tanana Rivers	- develop a plan to identify tagging sites and locations for remote tracking stations in preparation for radio tagging and tracking of fall chum salmon in subsequent years.	ongoing	NBS NMFS USFWS ADF&G TCC DFO	all aspects equipment & technical support all aspects all aspects all aspects all aspects
Yukon Border Sonar	mainstem Yukon River, near Eagle, RM 1,213	- develop methods for use of split-beam sonar equipment to estimate Chinook and fall chum passage into Canada.	did not operate in 1995	ADF&G DFO USFWS	all aspects all aspects providing equipment
Tanana River and Tanana village Fish Wheel Test Fishing	mainstem Tanana River, Manley, RM 765 Nenana, RM 860 mainstem Yukon River, Tanana, RM 695	- index timing of the summer chum, and/or, fall chum, and coho salmon runs using test fish wheels.	Aug. - Sept. June - Sept.	ADF&G ADF&G	all aspects all aspects
Tanana River Tagging (new)	mainstem Tanana River between RM 793 and 860.	- estimate the population size of the Tanana River fall chum salmon run above the confluence of the Kantishna River using mark-recapture methodology; - investigate feasibility of employing project results as a future, reliable in-season management tool for assessing fall chum salmon run strength and timing on an annual basis.	Aug. - Sept.	BSFA ADF&G BSFA	all aspects all aspects provided partial funding
Toklat River Sonar & Barton Creek Weir	mile 15 Toklat River, Kantishna River drainage, Tanana River drainage, RM 853	- estimate daily escapement of salmon into the Toklat River; - estimate age, sex, and size composition of the fall chum and coho salmon escapements.	Aug. - Sept.	ADF&G	all aspects
Toklat River Fall Chum Salmon Restoration Feasibility Study	Toklat River, Kantishna River drainage, Tanana River drainage, RM 838	- investigate restoration options for the Toklat River fall chum salmon stock; - investigate feasibility of conducting cold-weather, remote egg-takes from the Toklat River fall chum salmon spawning grounds; - estimate contribution of the Toklat River fall chum salmon spawning stock to proximal fisheries; - estimate the quantity and quality of the fall chum salmon spawning area of the Toklat River.	ongoing	ADF&G BSFA TCC	all aspects provided partial funding provided partial funding and partial staffing
Chena River Tower	mile 1 Chena River, Tanana River drainage, RM 921	- estimate daily escapement of chinook and summer chum salmon into the Chena River.	July - Aug.	ADF&G	all aspects
Salcha River Tower	mile 2 Salcha River, Tanana River drainage, RM 967	- estimate daily escapement of chinook and summer chum salmon into the Salcha River.	July - Aug.	ADF&G	all aspects

Agency Acronyms:

ADF&G = Alaska Department of Fish and Game
 ADPS = Alaska Department of Public Safety
 AVCP = Association of Village Council Presidents, Inc.
 BSFA = Bering Sea Fishermen's Association
 CATG = Council of Athabascan Tribal Governments
 DFO = Department of Fisheries and Oceans (Canada)
 NBS = National Biological Service
 NMFS = National Marine Fisheries Service
 TCC = Tanana Chiefs Conference, Inc.
 USFWS = United States Fish and Wildlife Service
 YRDLA = Yukon River Drainage Fisheries Association

Appendix A.2. Agenda Change Request 3. Review The 1995 Yukon River Drainage Fall Chum Salmon Management Plan.

During the November 1994 Board of Fisheries meeting in Anchorage, the board adopted a management plan for Yukon River drainage fall chum salmon. As adopted, the management plan was for the 1995 season only. The Board requested that the public and the department report back to the Board of Fisheries on how well the 1995 management plan worked. It was the intent of the board to make any necessary changes to the plan prior to the 1996 season. The 1995 management plan, as adopted in November 1994 is as follows:

5 AAC 01.249. THE 1995 YUKON RIVER DRAINAGE FALL CHUM SALMON MANAGEMENT PLAN.

The objective of the management plan contained in this section is to ensure adequate escapement of fall chum salmon into the Yukon River drainage and to provide management guidelines to the department. The commissioner, by emergency order, shall implement this plan during the period from July 16 through December 31 each year, as follows:

(1) the department shall use the best available data including preseason projections, mainstem river sonar passage estimates, test fisheries indices, subsistence and commercial fishing reports and passage estimates from escapement monitoring projects to assess the run size for the purpose of implementing this plan;

(2) when the projected run size is less than 400,000 chum salmon,

(A) the department shall close the commercial, sport, and personal use directed chum salmon fisheries;

and

(B) the department shall close the subsistence directed chum salmon fisheries except that if indicators suggest that an individual escapement goal in a subdistrict, district, or a portion of a subdistrict or district will be achieved, the commissioner may, by emergency order, allow a subsistence directed chum salmon fishery in that subdistrict, district, or portion of the subdistrict or district;

(3) when the projected run size is at least 400,000 but not more than 600,000 chum salmon,

(A) the department may restrict the subsistence directed chum salmon fisheries;

and

(B) the department shall close the commercial, sport, and personal use directed chum salmon fisheries except that if indicators suggest that an individual escapement goal and identified subsistence needs in a subdistrict, district, or a portion of a subdistrict or district will be achieved, the commissioner may, by emergency order, allow a commercial, sport, or personal use fishery in that subdistrict, district, or portion of the subdistrict or district;

(4) when the projected run size is more than 600,000 chum salmon, the department may open a subsistence fishery to the fishing seasons and periods specified in 5 AAC 01.210 and 5 AAC 05.367, open

a personal use fishery of up to 84 hours of fishing per week, and open a sport fishery to allow for the retention of chum salmon;

and

(5) when the projected run size is more than 650,000 chum salmon, the department may allow for a commercial fishery with the harvest distribution by district or subdistrict proportional to the guideline harvest range established in 5 AAC 05.365; the department shall distribute the harvest levels below the low end of the guideline harvest range by district or subdistrict proportional to the mid-point of the guideline harvest range;

(6) the provisions of this section do not apply after December 31, 1995.